THE MEANS OF PROLONGING LIFE AND AVOIDING DISEASES

L. L. SMITH.

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BY

LOUIS L. SMITH, M.P., L.S.A.L.

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PREFACE.

FEELING the importance of giving the community of this colony some knowledge of Disease, in order that they may the more thoroughly ward it off, I now purpose to issue a series of small books explanatory of the Laws of Health.

The present is the first of the series; others will follow, devoted to the subjects of "Obstacles to Marriage," "The Diseases of Married Life," "Sterility," "The Infirmities of Age," "Diseases Incidental to the various Professions and Trades," and a few similar topics connected with that Department of the Profession to which I have long specially devoted my attention. In doing so, I may add, that I only comply with a very general desire for infor-

mation on subjects I am daily consulted on, and concerning which, the public are aware, I have had greater experience than any other practitioner in these colonies.

192 Bourke Street East,
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CHAPTER I.

THE CAUSES OF DISEASE.

For the purpose of properly fulfilling the animal economy it is requisite that every man should be in health, as he is thus the more effectually enabled to throw off disease; and, according to the condition of his health so will be his power in repelling that disease. Take, for instance, Miasma: a strong man will be enabled to resist this, but the weak one succumbs to it, and he thus gets a disease which we know as Ague. Both these persons are exposed to the same atmospheric poison; but the one, in consequence of his strength, resists it, while the other, by reason of his weakness, becomes its subject. We therefore look upon weakness as a predisposing cause of disease. In order to prevent this susceptibility to disease, it should, consequently, be our aim to ward this weakness off.

Let us then, in the first instance, see how disease will be produced by weakness. Take for instance Intemperance. The effect of this is to lower the powers of the constitution. The liver becomes affected in consequence of the excessive stimulus, and this gives rise, in the first case, to Congestion, which, in turn, impedes that organ, and thus gives rise to Dyspepsia, or as it is generally termed, Indigestion. The body is by this means deprived of its nutriment; the blood is impoverished, and hence we find a low condition of the vital powers, terminating in scrofula, pulmonary consumption, and similar diseases. The liver, congested by intemperance, becomes also itself diseased in its structure, and we then get a condition known as Nutmeg, or Gin-drinkers' Liver. In this colony, where the heat is great in summer and the air is thus much rarefied, the lungs do not possess the power of relieving themselves from the large amount of carbon taken into the system, both by way of food, and—what is far more frequently the case—by the eternal "nobbler," which, in so far as we are concerned on the present occasion, is but carbon itself under another form. Now, the

excess of carbon, as it cannot be got rid of by the lungs, must be dispelled from the system by some other organ, and that organ is the liver. The latter being thus overworked becomes weakened and diseased, in obedience to that law of the animal economy which enjoins that excessive exertion of an organ naturally leads to its disease.

Let me give an illustration, especially applicable to this colony, to show how the liver in a warm climate may become affected by excess of feeding. Here we take no account of the difference which exists between the temperature here and that which is found in England. We arrive here, loaded with all our native prejudices in favour of roast beef and plum-pudding being the most appropriate and durable diet for an Englishman; and on the hottest summer's day, when the thermometer ranges perhaps from 110° to 120° in the shade, we take our rump-steak and bottled stout for dinner, and perhaps wind up with a few glasses of execrable fiery port. And what in all this have we done? We have taken into the system huge masses of carbon, which the lungs are not capable of throwing off; for, in consequence of the rarefi-

cation of the atmosphere, there is not a sufficient quantity of oxygen present in them to combine with the carbon and enable them to throw it off in the shape of carbonic acid gas. The carbon consequently remains in the system, where it must either deposit itself in the shape of fat, or be got rid of by the liver. If by the latter, the organ being unduly exercised, becomes hypertrophied, or, to make use of an expression more generally known, enlarged.

This enlargement might possibly have been avoided had the individual taken more exercise, but the heat of the weather precludes this, and, conjoined with the undue diet with which he has gorged himself, gives rise to lethargy, and the usual "forty winks" are substituted for exercise. Matters are then made worse: the carbon continues in the system, and the disease, or enlargement, already alluded to, follows. If I might be permitted here to offer a familiar illustration, I might mention that a colonist can select no more effectual means of securing enlargement of the liver than this, as he thus follows all the measures employed in the instance of the goose, whose liver is employed in the fabrication of that compound so dear to

epicureans, the *paté de foi gras*, or famous Strasburg pie. These unfortunate bipeds, it is well known, are first nailed by the web of their feet to a plank and then placed in front of a fire. They are then well crammed with food, and the place is suddenly darkened, so as to induce in them a belief of the descent of night. In half an hour the room is suddenly lighted; and the poor animal, being thus led to believe that day has dawned, commences to feed again; the stratagem being thus half-hourly repeated until its liver in a short time becomes as effectually enlarged as that of a number of our colonists.

Again, to illustrate how prejudicially excessive richness of food and want of exercise act upon the liver, I may mention the case of two fawns which were kept by the students in Guy's Hospital, London, and abundantly supplied with the linseed poultices that had been thrown aside after having served their purpose on the patients. These animals, though confined in a space so limited as to preclude them from taking the requisite exercise, looked the picture of health, had the sleekest skins, and in every respect seemed in the primest of condition. But

one day, after a short period, one of them suddenly sickened and died: the other speedily followed; and, on opening their bodies, the livers of both were found to be enormously enlarged—"enlarged," in fact, as some of the students remarked, "to the condition of an Indian nabob's."

With these prefatory remarks, I may now proceed to the definement of Health. I look upon Health as a natural and proper condition of the various functions and structures of the body; and in order that health may be maintained, it is necessary that every organ should discharge its due function in direct relationship with its neighbours. If, therefore, one organ does not perform its duty properly, another is assigned the task of acting as a substitute; and, being thus overworked, disease is consequently engendered.

Disease, then, is where the balance is disturbed; and I may illustrate this by a familiar example. If I eat a good dinner, and do not feel it in my stomach, that shows a healthy function and a healthy structure; but if I have a sense of uneasiness, pain, flatulence, &c., the *function* has undergone a change and become

diseased. If this continues for a lengthened period, and the membranes of the stomach and adjacent parts thicken in consequence, diseased *structure* follows; and we have thus at the same time disease both in function and structure, though they are not necessarily co-existent.

Nature, if left to herself, invariably makes a strenuous effort to repel or keep off disease; and I believe that, were she seconded in her aims, the majority of mankind might not only attain the allotted age of three score years and ten, but, in most instances, greatly surpass it, and approach the limits of a century. Nay, I would not limit him even to this; for if the functions are carried on in harmony, as already mentioned, I believe it would be difficult to define the bounds of his life, and that extraordinary longevity might be attained, as in the instance of old Parr and numerous others, including Momus Cugna, a Bengalese, who is recorded to have died in 1566 at the incredible age of three hundred and seventy. According to Scripture, the antediluvian race of man—such as Adam, Methusalah, and others, reached an age still more venerable; but the recently published speculations of a dignitary of the

Church of England, Dr. Colenso, Bishop of Natal, Cape of Good Hope, I am aware, have rendered these statements problematical in the opinion of many.

Reverting to nature, let us now see by what means she endeavours to repel disease. Noxious products of the body are got rid of by excretion: as by diarrhœa, for instance. Offending substance, introduced into the stomach as food, are expelled by vomiting or by stool. A grain of sand, finding its way into the eye, is washed away by tears—irritating matters, entering the nostrils or bronchial tubes, are forcibly driven out by sneezing or coughing. A person who, swallowing victuals suddenly, for instance, allows a little to pass into the larnyx—or "wrong way," as it is termed—is immediately seized by a violent fit of coughing, and the offending matter is thus expelled. If cold be the exciting agent, the blood is thrown inwardly, and congestion would be the result were not the heart thus stimulated to increased action, by means of which the blood is transmitted more rapidly through the lungs, and, heat being consequently generated, the cold is removed. If it be a contagious poison, such as small-pox,

it is expelled from the system by means of eruption on the skin.

Internally as well as externally, or locally as well as constitutionally, the same remarks hold good. A splinter, for example, forced into any part of the body acts as an irritant, and causes a determination of blood to the part, giving rise, in the first instance, to inflammation, resulting in suppuration, or the formation of matter, until the foreign substance is expelled.

But if the resisting power — that is, the repelling power, or *vis medicatrix naturæ* be weakened, the irritating agents, such as colds, &c., prevail over it, and disease ensues; and it consequently becomes necessary for us to ascertain what are these debilitating causes, inasmuch as we know that those debilitating causes are mainly those which produce disease —that is, they deprive the body of the ability to resist it.

How, therefore, is debility produced? First of all, it may arise from Imperfect Nourishment, and several subjects are to be considered under this head. Nutrition, for instance, will be imperfect unless food is administered according to the wants of the system. Growth, for

example, materially influences it: a growing lad will require more food than a man of forty, because he requires not only the means of supplying the waste that ensues in his body, but also those of increasing or building it up. The amount of work which the body has to undergo is also a material consideration; for, in proportion as the extent of labour to which it is subjected increases or diminishes, the quantity and quality of food ought to vary. Temperature is another topic for consideration; for the food must be varied, according as he works in the open air or in a confined atmosphere, inasmuch as each of these act differently upon his constitution. This diet, in short, must be regulated by the circumstances which surround him, and at all periods of life this remark holds good. It is necessary consequently, to bear it in mind during infancy as well as in age; and I may here remark that I have often been surprised by the injudicious manner in which mothers feed their children, as I have already stated in my MEDICAL ALMANAC. I have already alluded to this subject at great length there, and here, therefore, I shall only observe how frequently they injure the infant by stuffing it on every

occasion. If the child, for instance, has a slight pain or spasm in the stomach, perhaps arising from acidity, the mother instantly offers it the breast. Should it be a little older, she has recourse to "lolly," which only increases the irritability; and the child is thus on all occasions gorged until inflammation sets in and terminates in death. The majority of infant deaths in this colony, I have no hesitation in saying, are produced by overfeeding and the noxious influences of such substances as "taffy," "candy," &c., when administered in excess. The people seem incapable of reflecting that a child's stomach will derive benefit by being left at rest.

Imperfect nourishment may also arise from improper food, producing derangement and ultimately disease of the digestive organs; for, if the food be not properly digested, no heat-generating principles can be obtained from it. The consequence will be that the body is unable adequately to resist cold, just as in an ordinary fire-place diminution of heat will follow diminution of fuel. Hence we get low fevers, inflammations, &c., and are more susceptible to epidemic and contagious diseases.

I do not think of here mentioning Typhus fever, which is generally the result of inanition or imperfect nourishment; because in this colony the people are for the most part well-fed, or at all events have usually a much more abundant supply of food than the corresponding classes in the community in England and Ireland.

In addition to this, imperfect nourishment produces weakened intellect. Sir John Franklin noted this—he said, "I observe that as our strength decayed (through starvation) our minds exhibited symptoms of weakness evinced by a kind of unreasonable pettishness with each other. Each of us thought the other weaker in intellect than himself and more in need of advice and assistance. So trifling a circumstance as a change of place, recommended as being warmer and more comfortable, and refused by the other from dread of motion, frequently called forth fretful expressions, which were no sooner uttered than atoned for, to be repeated perhaps in the course of a few minutes. One man was so convinced of this that he exclaimed 'I wonder if we return to England, whether we shall receive our understandings?'"

Impure Air is the second cause of debility; as may be very readily understood when the fact is mentioned that carbonic acid gas, which is exhaled from the lungs, is in its pure state most fatal to life, and even in a diluted form is the most depressing atmosphere we can breathe. In this colony it is more generally known by the name of "Choke damp," and the fact is notorious that our diggers, on descending a mine, are in more danger from it than any other source, inasmuch as they frequently fall dead or insensible the moment they come in contact with it. To come nearer home—our shopmen, students, printers, and those living in crowded narrow streets, all suffer from the same cause; and even at the best they invariably contrast unfavourably with the market-gardener and others from the suburbs, the sallow cheeks of the one presenting a most striking difference from the ruddy aspect of the other. The impure air, of course, brings on disease of the respiratory and circulating organs; and the vital powers being depressed, consumption or deposition of tubercle in the lungs follows. When it is considered that at each inspiration we inhale at least a pint of air, and that eighteen

inspirations are made in a minute—that we exhaust the life-giving or exhilarating property of this air, namely the oxygen, and that in its place we exhale this poisonous carbonic acid gas—it can no longer be a matter of surprise that our children, who are confined in small ill-ventilated schoolrooms for many hours at a time, should be weak, exhausted, and depressed.

A third source of debility is Excessive Exertion of body and mind. It is well known that Heenan, in the late fight for the Championship of England, lost the battle in consequence of his overtraining, his inherent strength having thus been overtaxed. Excessive mental exertion acts in a similar way. Conjointly they exhaust the animal functions, disorder the circulation, and produce congestion, &c.

Want of Sleep is a fourth cause of debility. When the body and mind are exhausted, sleep coming on, restores them. Continued wakefulness disturbs the heart's action and the circulation in the brain. This is exemplified in many cases of daily life, especially in this colony, where sudden reverses of fortune are so frequent, where, for instance, the merchant, instead of confining his capital to his own

legitimate business, speculates in quartz-mining and other shares; and finding his speculations unproductive, when he expected to receive a dividend, and that he perhaps cannot meet his business engagements, anxiety supervenes, he becomes restless at nights, want of sleep follows, the brain becomes disordered, and insanity in but too many instances is the result.

The fifth cause of debility is Want of Exercise. It is a well-known fact that the Brahmins of India, merely by keeping an arm bound up, and in an attached position by their side, will thus render the arm powerless by the shrinking of the muscles which is thus produced; and in every-day life we find the muscles losing their power from the same cause. The reason is obvious: the circulation is impeded, and the heart pumps the blood so feebly to the extremities as not to afford sufficient nutrition and heat. Hence we get cold feet, dry skin; and from the same cause the blood passes sluggishly through the liver, which consequently becomes congestive, is unable to secrete bile, and the intestines thus being deprived of their stimulus become costive: hence arise indigestion and piles. If the blood do not pass with sufficient

frequency through the lungs, it does not receive its due quantity of oxygen, the carbon remains unconsumed, and the body becomes fat. For the same reason, palpitation of the heart is found in persons who do not take sufficient exercise; and, in addition to this, we find headache, dulness, &c., the latter arising from the circumstance that the brain does not receive its due stimulus from the blood.

Long-continued Heat is the sixth cause of debility. Heat is relaxing; and in this colony, where it is often excessive, we suffer much from its effects in giving rise to diseases of the circulatory organs. The heart consequently often suffers severely, and the muscles lose their tone. The pores of the skin become unduly open by means of this relaxation, and profuse perspiration is engendered, the serum passing off, and leaving only the richer part of the blood, which overstimulates the liver. Bile is thus thrown out excessively on the intestines; and dysentery, diarrhœa, and cholera ensue. These diseases, however, frequently arise amongst our miners and working classes, from the want of caution with which clothing is thrown off by them when the body is heated,

or by the same apparel being worn at night when the weather is cold, as during the day when the temperature is higher. The skin thus becomes chilled, blood deserts it, and rushes inwardly to some organ such as the liver, and gives rise to congestion. The remedy for this is obvious: namely, always to wear flannel next the skin, however warm the day may be, and at night to put on a little extra apparel; avoiding damps, draughts, chills, &c.

The seventh cause of debility is Long-continued Cold. The effects of cold on the system are the reverse of those of heat, when applied for a short time, as then it acts as a tonic, but when long continued, it, on the contrary, weakens. During winter there is always a large number of deaths arising from cold, in infants and children, who are naturally weak, and also in the ranks of the old and infirm. Dr. Beaupré mentions cases of soldiers having expired as if struck by lightning, in consequence of this action of cold upon their hearts; some of them thus suddenly dying when falling into line on the heights of Borysthenes. Generally speaking, we are all familiar with its effects; and, as I have already stated, it, when moderate,

invigorates and gives tone to the nervous system; acts upon the capillaries of the skin, by first driving the blood to the surface, and then causing it to return with increased vigour; thus giving rise to a comfortable and easy glow. But if the cold be excessive, and exposure to it unduly continues, internal congestion arises; the blood circulates sluggishly through the brain, and partial coma or sleep is produced in consequence of this organ being deprived of its stimulus. If carried to excess, all sensibility at last disappears, and death ensues. Often indeed benefit may be derived from taking advantage of these effects: as a proof of which I may mention it as a well-known fact that many surgical operations are frequently performed without pain merely by the application of intense cold; and I trust that in future it may often in this respect be employed as a substitute for chloroform, from the injurious effects of which, death has been so frequently found to arise, even in such a trifling operation as the extraction of a tooth. Mothers also may with advantage take a hint from it—especially in this colony, where they frequently, with a view of showing off their children, dress them

in a style equally cruel and ridiculous ; enveloping their bodies in some stout and costly dress, but leaving the legs and arms, where the clothing should chiefly be, entirely bare. The consequence of this is internal congestion, and the child is sacrificed on the altar of fashion. In England, I may, in corroboration of this fact, mention, it is computed, that two-thirds of the children of the poor die during winter, entirely in consequence of insufficient clothing.

Spirit-drinking and Habitual Intoxication may be considered as the eighth cause of debility. A "Nobbler," as it is termed here, or "Go" of spirits, as it is called in England, is speedily absorbed into the system, and its stimulating effects are quickly felt, especially upon the heart ; but shortly afterwards it is absorbed by the veins, and by these is conveyed to the liver and kidneys, in both of which it acts injuriously. If the spirit be taken in large quantity, cerebral excitement and intoxication follow ; congestion of the brain and insensibility supervene ; and apoplexy, palsy, or delirium tremens, follow. In habitual drunkards the stomach becomes literally hardened like leather. They consequently lose appetite, become the subjects

of indigestion and bilious complaints: vertigo, gout, and gravel ensue; and the wretched victim of intemperance dies at last of inanition or pure starvation.

The ninth cause of debility is Depression of the Mind, or Grief. The mind is connected with the nervous system in a most intimate and extraordinary manner, and frequently acts in such a manner as to produce disease. The *Malade Imaginaire*, for example, or person who imagines he is the subject of disease, frequently, by fixing his mind on a certain organ, can produce that disease. The reverse too, is the case; for if you disturb his attention from that organ, or from *himself*, he will, in nine cases out of ten, recover. Dr. Armstrong, a physician of great ability in his day, said, just before his death, to Dr. Boot: "Remember, Boot, to be always cheerful in your intercourse with the sick; it takes a load from the heart, and infuses into it hope and confidence;" and the remark, in all cases, holds good, for the mind is most intimately connected with the body. To show, for example, the influence of the mind on the nervous system, and that of the nervous system on the organs, take the action of *Blushing*, and consider how

it is produced. A maiden, whose mind is shocked by a rude remark, receives the impression, which in its turn is conveyed to the brain and nervous system, whence it is transmitted to the heart and circulating vessels, which finally carry it on to the capillary organs of circulation on the skin of the face, where it is almost instantaneously produced. Many a patient, I may add, has, merely by exerting influence on his mind, been cured of some imaginary malady, or even real disorder of the functions. In illustration of this, I may remark, that, some years ago, I knew a case of severe indigestion cured merely by the application of a galvanic ring to the finger, after it had baffled all medical skill. Faith, in this instance, did it all; and it may be remembered by my educated professional brethren that Celsus records the case of a man who, solely by the exertion of his will, or "willing it," as the phrase is, could arrest the action of the heart to such a degree that he could lie for hours like a dead man. The action of the mind, too, will produce disease of the mind. A Hypochondriac, for example, allows his thoughts to wander to his stomach and digestion; the

latter consequently becomes impaired, and his nervous system being thus reacted on, the brain is affected, and he grows eccentric, avoids society, suffers from disease of the cerebral organs, and ultimately turns insane. A judicious medical man in such a case can do much —nay, he can even arrest this and other diseases by keeping in view the fact that the weakness of the mind often arises from weakness of the body. It is thus that the Electro-Biologist, or Mesmerist acts, by means of the influence he exerts over his patient or captive. It is, in fact, the mere power of the strong over the feeble; and, in a similar manner, does this strength of mind often prove successful in averting disease. A courageous man, for example, who fearlessly enters an affected room, will generally escape contagion; whereas a timid one, on the contrary, by his own apprehensions alone, will frequently become its victim.

Emissions in Excess constitute the tenth cause of debility. Diarrhœa may be looked upon as one of these: excessive menstrual flux, in females, may be regarded as another. Leucorrhœa; or, as it is more generally termed,

"Whites," by continually draining the system materially reduces the vital powers. Nothing, however, more rapidly impairs these powers than the loss of semen, the continual emission of which has the same effect as the discharge of sap from the punctured tree. As a proof of this may be mentioned the fact that many of our animals, after performing the act of copulation, die. While upon the subject, I may mention that there is nothing which produces so great and evil an effect upon the constitution as the abominable practice of masturbation, as I shall afterwards explain in a work on that subject, now in the press, entitled "THE OBSTACLES TO MARRIAGE,"—a book which those who are interested on this topic will do well to consult, as I have there fully alluded to it, as well as to early marriages. While alluding to this delicate subject, I may also mention Gonorrhœa as amongst the principal causes of debility in the shape of evacuation; the discharge of the mucus and pus of which it consists, acting as a heavy and most enfeebling drain upon the system—to such an extent indeed that Sir Astley Cooper well stated: "Gonorrhœa, indeed, as has been remarked, may sometimes wear itself

out, but it will more frequently sooner wear out the constitution and the life of the sufferer."

The eleventh cause of debility is Defective Cleanliness. When it is considered that the surface of the body contains no less than seven millions of pores, and that the length of the tubes attached to each of these pores is about the sixth of an inch, and that if the whole of them were longitudinally joined together, they would form a canal or common sewer about twenty-eight miles in length, through which a large mass of refuse passes out of the sytem—an adequate idea may be formed of the importance of keeping these pores open. If we reflect also that another purpose of the skin is that of Perspiration, and that a man breathes through his skin equally as by the medium of his lungs—that his blood, by means of the skin also, becomes decarbonized, as proved by the fact that if an animal be taken and have its skin covered over with an impenetrable varnish, it will eventually die of asphyxia, as certainly as if it had been strangled by a rope, we find another illustration for the paramount necessity of keeping it clean. Hence the pernicious effects of what is termed enamelling the skin,

especially the face, neck, and arms, as recently proved in the case of the notorious Madame Rachael, of London, and certain fashionables, or would-be fashionables in metropolitan life, who were foolish or credulous enough to become her dupes. The effect, of course, of closing up the pores of the skin either by means of enamel or ordinary dirt is to prevent the discharge of noxious matters from the system; and consequently in an equal degree to obstruct respiration; and, on the other hand, as these minute vessels of the skin act as absorbents also, pernicious matters, whether in the shape of enamel or ordinary filth, are thus, to its great injury, introduced into the constitution. The importance, I may further add, of attending to the skin and keeping it in a state of cleanliness is daily evidenced by the care which horse-jockies and grooms who understand their duties bestow in keeping it glossy—a proof, of course, that it is also clean.

Defective Ventilation is the twelfth cause of debility. No better illustration of this, perhaps, can be given than the following extract from a letter addressed by the celebrated Dr. Arnold, to the Editor of the *Times* London

newspaper, in which he sets forth Dr. Arnott's suggestion of taking a brick out of the wall near the ceiling of the room, so as to open a direct communication between the room and the chimney. Any occasional temporary inconvenience of down-draught will be more than compensated by the beneficial results of this simple ventilating process. Dr. Arnott says :

"A system of draining and cleansing, water supply, and flushing, for instance, to the obtainment of which chiefly the Board of Health has hitherto devoted its attention, can, however good, influence only that quantity and kind of ærial impurity, which arises from retained solid or liquid filth within or about a house, but it bears absolutely untouched the other and really more important kind, which, in known quantity, is never absent where men are breathing, namely, the filth and poison of the human breath. This latter kind evidently plays the most important part in all cases of a crowd, and therefore such catastrophes as the Tooting school with 1,100 children, of whom nearly 300 were seized with cholera ; of the House of Refuge for the Destitute, and of the two great crowded Lunatic Asylums here, where the disease made similar havoc : for places so public as these and visited daily by numerous strangers, could not

be allowed to remain visibly impure with solid and liquid filth, like the Rookery of St. Giles's, and other such localities. Now, good ventilation, which, although few persons comparatively are as yet aware of the fact, is easily to be had—not only entirely dissipates and renders absolutely inert the breath-poison of inmates, however numerous, and even of fever patients; but in doing this, it necessarily, at the same time, carries away at once all the first-named kinds of poisons arising from bad drains, or want of drains, and thus acts as a most important substitute for good draining, until there be time to plan and safe opportunity to establish such. It is further to be noted, that it is chiefly when the poison of disease, &c., is caught and retained under cover, and is there mixed with the breath, that it becomes very active; for scavengers, nightmen, and grave-diggers who work in the open air are not often assailed with the disease; and in foul neighbourhoods, persons, like butchers, who live in the open shops, or policemen, who walk generally in the open streets, or in Paris, the people, who manufacture a great part of the town-filth into portable manure, suffer very little.

"In regard to the dilution of ærial poisons in houses by ventilation, I have to explain that every chimney in a house is what is called a sucking, or drawing air-pump, of a certain force, and can be easily rendered a valuable ventilating pump. A chimney is a pump, first, by reason of the suction,

or approach to a vacuum made at the open top of any tube across which the wind blows directly; and, secondly, because the flue is usually occupied, even when there is no fire, by air somewhat warmer than the external air, and has, therefore, even in a calm day, what is called a chimney draught proportioned to the difference. In England, therefore, of old, when the chimney breast was always made higher than the heads of persons sitting or sleeping in rooms, a room with an open chimney was tolerably well ventilated in the lower part, where the inmates breathed. The modern fashions, however, of very low grates and low chimney openings have changed the case completely, for such openings can draw air only from the bottom of the rooms, where generally the coolest, the last entered, and therefore the purest air, is found; while the hotter air of the breath, of lights, of warm food, and often of subterranean drains, &c., rises and stagnates near the ceilings and gradually corrupts there. Such heated impure air no more tends downwards again to escape or dive under the chimney piece, than oil in an inverted bottle immersed in water will dive down through the water to escape by the bottle's mouth; and such a bottle, or other vessel, containing oil, so placed in water with its mouth downwards, even if left in a running stream, would retain the oil for any length of time. If, however, an opening be made in the chimney flue through the wall, near the ceiling of

the room, then will all the hot impure air of the room as certainly pass away by that opening as oil from the inverted bottle would instantly all escape upwards through a small opening made near the elevated bottom of the bottle. A top window-sash lowered a little, instead of serving, as many people believe it does, like such an opening into the chimney flue, becomes generally, in obedience to the chimney draught, merely an inlet for cold air, which first falls as a cascade to the floor, and then glides towards the chimney, and gradually passes away by this, leaving the hotter and impure air of the room nearly untouched.

"For years past have I recommended the adoption of such ventilating chimney openings as above described, and I devised a balanced metallic valve, to prevent, during the use of fires, the escape of smoke to the rooms. The advantages of these openings and valves were soon so manifest that the referees appointed under the Building Act, added a clause to their Bill allowing the introduction of the valves, and directing how they were to be placed, and they are now in very extensive use. A good illustration of the subject was afforded in St. James' Parish, where some quarters are densely inhabited by the families of Irish labourers. These localities formerly sent an enormous number of sick to the neighbouring dispensary. Mr. Toynbee, the able medical chief of that dispensary, came to consult me respecting the ventilation of such places,

and on my recommendation had openings made into the chimney flues of the rooms near the ceilings by removing a single brick, and placing there a piece of wire-gauze with a light curtain flap hanging against the inside, to prevent the issue of smoke in gusty weather. The decided effect produced at once on the feelings of the inmates was so remarkable that there was an extensive demand for new appliances, and as a consequence of its adoption, Mr. Toynbee had soon to report in evidence given before the Health of Towns' Commission, and in other published documents, both an extraordinary reduction in the number of sick applying for relief, and of the severity of diseases occurring. Wide experience elsewhere has since obtained similar results. Most of the hospitals and poor-houses in the kingdom now have these chimney valves, and most of the medical men, and others, who have published of late on sanitary matters, have strongly commended them. Had the present Board of Health possessed the power, and deemed the means expedient, the chimney openings might, as a prevention of cholera, almost in one day, and at the expense of about a shilling for a poor man's room, have been established over the whole kingdom."

I need say nothing further than that the want of ventilation gives rise to phthisis, or pulmonary consumption, and similar diseases, in

consequence of its exhausting effects on the vital powers.

Lastly, but not least among the causes of debility, I would mention the highly injurious effects of Diseased or Improper Food. With respect to the former, I know it is a moot point amongst the profession whether it will actually produce this, as they argue that diseased food and healthy food are, when taken into the stomach, alike eventually reduced to the same condition by the action of the gastric juice: but in my place in the Legislature I have had to confute these dogmas; and I leave it to the common reason and ordinary reflection of my readers, to decide whether if poisonous and diseased food be taken into the system, the products of that food must not necessarily be poisonous and diseased too. Science teaches us, that the milk which the child imbibes from the mother, if the latter has taken antimony, iodine, or mercury, or any soluble vegetable matter, will, if analysed, be found to contain these ingredients. The child, by consuming this milk, can be medicinally acted upon. How frequently do we find the wet-nurse has produced syphilitic disease in the child by the

medium of the milk? In like manner, in the case of consumption of pleuro-pneumonia meat I adduced numerous instances, in a lecture I gave on the subject, where persons were attacked with vomiting, prickly heat of the skin, and vertigo. Since then I have noticed several similar cases recorded in country journals. It will be remembered also that some years ago I drew the attention of the public to the subject of diseased food—salmon more particularly—which, when consumed, produced diarrhœa, vomiting, and swelling of the head and face, &c. I am sorry, however, that the public took an exaggerated view in each instance, and refrained from eating fish altogether, although I warned them only of the salmon, and that they abstained *in toto* from beef, when I only warned them of pleuro-pneumonia beef. The fishermen then hung up their nets, and swore vengeance against me; but *tempora mutantur*, and I am looked upon as their best friend, if I may judge from the petitions which are continually presented to me to advocate their rights in Parliament. The butchers, in like manner, may feel at present aggrieved, but in the end I doubt not they will find equally little reason to com-

plain, as they must clearly see I had a public duty to perform, from which I did not shrink; and the quality of the beef having improved, the demand has become greater. Professor Gamge, Dr. Livingstone, and others have shown that the consumption of pleuro-pneumonia beef has produced carbuncles; and it is a singular circumstance that about the same time that Professor Gamge found out this fact, Dr. Livingstone noticed it in Southern Africa. The motion I lately carried in Parliament, offering prizes to the amount of £300 for the best essays on Scab and Pleuro-Pneumonia, and the effects of diseased meat on the system, will, I trust, satisfactorily set at rest the public mind on this subject.

While alluding to this topic, I may mention that raw or uncooked meat frequently contains a large quantity of parasites which nothing under a boiling heat of 212° will destroy. Hence, these will exist in sausages and ham, no matter how well soever the former may be prepared or the latter cured. Sausages—those savoury compounds so much delighted in by Mr. Fagin and his interesting protegés, and which the American said it only required

"confidence" to eat—are composed frequently of diseased meat, or tainted meat disguised by spices. When in this state, they of course produce disease, and in fact there is a disease known by the name of the "Sausage Disease." The parasites, if not destroyed by cooking, are taken into the system and lodge there; making their way thus into the different organs and tissues of the body. I may mention one case—that of a lady who was under my treatment, who suffered from hydatids of the liver. She came from Bendigo, and the disease was undoubtedly traced to the circumstance that she had eaten diseased mutton. She was frequently tapped, and the hydatids resembled mere bladders of water. It is well known that those who eat diseased pork get tape-worm from it; and I think I lately saw a report in the newspapers, that no less than thirty-five persons were all poisoned at once in Vienna by eating measly pork, fifteen of them dying in horrible agony.

I have already mentioned so many causes of debility, and so many momentarily occur to my mind, that I am unwilling farther to prolong the subject. There is one, however,

which is so intimately connected with the sanitary condition of this colony, or rather this city, that it cannot be passed over. I allude to Drainage, and the inefficient means that are taken for the removal of our sewerage. I unhesitatingly assert that, unless speedy and efficient measures are adopted for the adequate removal of this, we shall soon pay the penalty. Our cesspools, at the present moment, are either allowed to overflow, or are so unfitted for their purposes, that their noxious contents enter and percolate the soil until the surrounding earth becomes thoroughly saturated. As soon as warm weather sets in, the heat descending this, raises an effluvium which contaminates the atmosphere, and produces low fever of a typhoid character. But this is not the only means by which it will ultimately affect the community; for, by sinking wells (for the purpose of keeping the water cold) into which it trickles, the water we drink is rendered equally contaminated. Another means by which the air we breathe, or the water we drink, can be infected, is through the vast amount of dead animal and other offensive matter that is thrown into the Yarra, and by tidal influences

is conveyed through our city. In the back-yards of the houses in our smaller streets great accumulations of noxious animal and vegetable matter are allowed to exist, and pools of stagnant water are also permitted to remain there. Now, the presence of vegetable matter in a state of putrefaction is the certain cause of malaria, especially when accompanied by heat; as an example of which I may mention that the country around Breda, in 1745, was inundated; after the peace the waters were let off, and the ground which had been covered was exposed to the rays of the sun; a very severe fever followed, and the epidemic was stopped by again letting the water loose on the country. The exhalations from decomposing matter are principally ammonia, sulphuretted hydrogen, and carburetted hydrogen gases; and if these gases are inhaled, great weakness and insensibility ensue, often terminating even in sudden death if they be concentrated. If there be a current of free atmospheric air passing through this contaminated vapour, it, of course, becomes diluted, and the effects for the moment are less felt, though they are in the end equally fatal.

I need not, I think, advance any further

argument to show how necessary it is that we should have a system of thorough drainage instituted in our city; but, as an instance of the success of sanitary measures, I may allude to Dr. Farre's report on the subject in the *Lancet*, of December 18th, 1858. He says:—

"The operations of the Board of Health at Macclesfield have been attended with as great success and as great a saving of human life as at Ely. Their sixth yearly report states that before the operations of the Board the rate of mortality in the borough was thirty-three in a thousand, while for the last four years it has been twenty-six in a thousand, so that 1,015 have been saved. In funeral expenses alone, calculated from the returns of 232 burial clubs, £8,729 have been saved. But a larger item would accrue under the head of diminished sickness, there having been 28,420 less cases of illness; and the cost of these cases being estimated, according to the data furnished by friendly societies, at one shilling a-day for twenty days, £28,420 would thus be saved. Here nothing is assumed. Again, an actual, instead of an assumed contrast can be presented, with no less agreeable result in the average length of life. The average age of all who died in the first period was twenty-four years (in the adjoining rural district it was thirty-four years); in the last five years it has

been twenty-seven years. Each year gains an accession; the last year's average being twenty-eight years and a-half. Length of days by three years has thus been added to each inhabitant.

"A few years ago, statements such as these received very little favour; indeed, many people affected to ridicule them. Now, however, such vital statistics have assumed an authority which prevents even the ignorant from questioning their real rules and tendency.

"All the facts are alike conclusive, and point to the same result, and any one will be as intelligible as the rest: the deaths of children under one year have decreased 16·3 per cent., and those under five years 4·6 per cent. These facts are eloquent in argument; and henceforth, if any man would prove that sanitary amelioration is fertile in health and life, and repays with interest the immediate outlay involved, he may refer to Macclesfield as a town whose history offers striking illustrations of that truth."

CHAPTER II.

THE NATURE OF DISEASE.

I AM often asked in my consulting room how it is that Colds or Catarrhs are so frequently experienced in this colony, and my answer is that the temperature varies so much, from a high to a low degree of heat, and from dry to wet—these changes, moreover, occurring so suddenly, and so few of us taking the precaution of wearing flannel next the skin—that a chill is produced, the perspiration is stopped, and cold ensues. Let us, therefore, trace the effects of a cold.

When the perspiration is stopped what takes place? The blood deserts the capillaries of the skin and passes to the mucous membrane; that membrane which lines the *fauces* and the whole of the respiratory organs. This membrane thus becomes gorged and congested, and the patient, in consequence, soon feels a

sensation of "stuffiness" in the nostrils. He also finds his sense of hearing becoming dull; and the cause of this is obvious—the same membrane lines the Eustachian tube which leads to the ear. The blood being determined to that part, the membrane is thickened, the passage is narrowed, and the sensitiveness of the auditory nerve is consequently impaired. This continues for about a couple of days; the patient in the meantime feeling a desire to get rid of the secretion which has thus been impeded. In a short time, however, an excretion does take place, of a glassy, watery matter, which is occasioned by the *liquor sanguinis*, or watery part of the blood, passing through the vessels, and mixing with a small portion of the mucous, or natural discharge from the nostrils. The eyes at the same time begin to water, the dulness of hearing becomes removed, and the patient feels relieved, obviously, because the surcharged vessels are relieved of their superabundant contents, and the passage is thus freed for the entrance of the air. If, then, proper precautions are taken—such, for instance, as the administration of sudorifics, recourse to warm baths, and, above all, con-

finement for twenty-four hours to a chamber of equable and warm temperature—the blood deserts the internal membrane, returns to its former channel, the skin acts, perspiration takes place, and health is restored. I have thus shewn how, by the application of proper remedies, timely resorted to, health may be regained and disease avoided. I could not have adduced a more familiar example than one which is daily presenting itself to our eyes, and I shall, therefore, now proceed to show how

> "For want of timely care
> Millions have died of medicable wounds."

We shall now presume that the congestion thus described has not been arrested in due time. The determination of the blood to the lining membrane of the nostril and adjacent parts, above alluded to, now gives rise to inflammation, which extends from the *fauces* to the larynx; giving rise to a new symptom, namely, huskiness of the voice, in consequence of the vocal chords which are situated there becoming implicated. If this inflammation

increases we then get a disease named *Laryngitis*; and the inflammation passing down, the bronchial tubes are next affected, thus giving rise to what is termed Bronchitis. New symptoms now set in—cough and the expectoration of phlegm, produced in the same manner as the mucous discharge already mentioned. The inflammation still farther extends until the small ramifications of the bronchial tubes are affected, and thus gives rise to the disease named Pneumonia, or Inflammation of the Lungs. The lining membrane of the lungs, termed the pleura, may next become affected, and we then have a disease named Pleurisy. If the disease be not arrested now a fibrinous effusion, known as lymph, is discharged into the lungs, and, pressing upon the smaller blood-vessels, forces the contents of these into the minute air cells, thus giving rise to what is termed Hepatization of the lungs, in consequence of the appearance they then present being similar to that of the liver. Or the lymph may take the form of pus, and then ulceration will set in; or, large masses of the lungs may actually slough away. This hepatization may eventually become altered in its form and assume a

hardened aspect, and we then find a deposition named tubercle, familiarly known to us as identical with that fatal disease termed *Phthisis Pulmonalis*, Consumption, or Decline.

Here then we have a powerful illustration of the common remark that

"Great events from little causes flow;"

or, in more common language, that "from want of a nail the shoe was lost, from want of a shoe the horse fell, and the rider broke his neck." I have thus shown progressively what evils may arise from a cause apparently so trifling at first as a cold—how a chill affects the skin, causing the blood to desert the capillaries externally, and force its way in increased quantities to the small internal vessels; giving rise to congestion and inflammation, which extending into the vital parts, terminate ultimately in effusion, suppuration, ulceration, and death—all of which might have been averted had the sufferer been informed of these facts by the perusal of a work such as this. Trivial as the disease, or rather this train of diseases, was in its origin, it might at the commencement have been cured

by means equally simple; for had the patient but placed his feet in hot water, and taken a slight sudorific at the outset, for the purpose of exciting perspiration, the whole of the consequences I have described might have been prevented.

This now brings me to another point, namely the consideration of how, when one organ of the body is arrested in the performance of its proper functions, others have to perform its office, so equally does each discharge its peculiar function, and so harmoniously do they all work. The skin, for instance, gets rid of something like eleven grains of perspiration in a minute, or, as has been computed $1\frac{2}{3}$lb at the minimum, and 5lb at the maximum, in twenty-four hours. This perspiration contains within it lactic acid, urea, and a large quantity of matters pertinent to the body. If it therefore be checked by the application of cold to the surface, these are driven internally, and must be got rid of by other means. We must now, therefore, consider what these means are.

It is a well-known fact that if the surface of the body be exposed to cold, the kidneys begin to act. This, therefore, is one of the means

by which nature removes the superfluous matter which otherwise would have been discharged by the skin. Another means is that by the lungs, which give off seven grains of watery vapour each minute, in their natural condition. If, however, any of these organs, in addition to its own duty, be called upon to discharge that of another, its action becomes greatly increased, and disease in it is thus engendered. Hence the importance of paying attention to the skin when either of these organs are affected, so that by its action the others may be relieved of their work. A vast quantity of physic and fees to medical men may thus be saved, if the public will keep this fact in view; as almost every one has it in his power to relieve the skin by the trifling means I have suggested.

Having thus alluded to the cutaneous, urinary, and respiratory organs, and shown the intimate connexion and sympathy which exists between them, the manner in which they become diseased, and the remedial measures requisite for their restoration to health, I shall now refer to the Digestive System and its Derangements. These indeed are not so frequently connected with cold as are the respiratory

organs, although the digestive organs become congested when the skin does not act; as a most direct sympathy exists between it and the mucus membrane by which the alimentary canal is lined. In fact, the connexion between the two is so intimate that, were it possible to alter their relative positions, the one would discharge the functions of the other; the one covering the whole of the external portion of the body, the latter the whole of the internal, and merging into each other at the lips and similar outlets of the body, where the line of demarcation may readily be seen.

Let us now thoroughly to illustrate the subject, trace the progress of food in its conversion into part of the animal frame. Taken into the mouth, it is first cut by the front teeth, torn by the canine or eye-teeth, and ground down by the molars or back teeth. During this process certain glands, which are situated at the sides and lower part of the mouth, pour out a secretion called the Saliva, which performs a most important office in the digestion of the food. In consequence of an active principle which it contains, any starchy matter, such as enters into the composition of every

species of vegetable food, is eventually converted into grape sugar—one of the chief elements in the animal economy. By means of this saliva the food is thoroughly moistened, preparatory to being formed into a ball by the tongue and passed into the gullet. In its transit to the gullet, or œsophagus, it has to be conveyed across the windpipe. This is done by means of a small piece of cartilage, which, in the act of deglutition, closes the orifice of the latter effectually—or, at least, ought to do so, for if any particle of food enters the windpipe, extreme irritation is set up until it be ejected. Presuming that it has entered rightly, the ball gradually descends the gullet, and enters the stomach at its larger orifice. By its presence there it stimulates certain glands, which are studded over the whole surface of the mucous membrane of the stomach, and causes them to put out a secretion named the Gastric Juice. This juice has very powerful dissolving properties—so powerful indeed, that I have known a case where a man swallowed a clasp-knife, and this proving fatal, of course, on opening his body the handle of it was found to be considerably eaten away, and the edge of

the blade itself corroded by the action. The food is thus converted into a pulpy mass, which is termed Chyme, and passes through another opening of the stomach into that part of the small intestines named the Duodenum. At this opening there is a small valve, which allows only digested food to pass, and causes the undigested to be returned and again submitted to the action of the gastric juice until it is properly comminuted. If, however, the food is of such an indigestible nature that it cannot be acted on by this juice, or the stomach is so weak as to be unable to secrete a sufficient quantity of the latter to act upon it, the repeated return of it causes a retrogressive action, and vomiting ensues. This will show two things—namely, the impropriety of taking indigestible food, and the importance of performing the operation of mastication well previous to deglutition.

When in the duodenum, the chyme, or pulpy mass to which the food is now reduced, has two secretions incorporated with it—one from the liver, called the Bile, the other from the pancreas, named the Pancreatic Juice. The former being alkaline in its nature, acts upon

the fatty matter; while the other exerts a similar influence upon the starchy, the saliva having previously prepared the latter for such action. The importance of the use of saliva will now be perceived, as well as the injury arising from its diminution in consequence of the copious expectoration of it while smoking or chewing tobacco. This is a fact which cannot be too much insisted on, especially in the instances of those who take it in excess, or are of weak digestion; and I have no hesitation in saying that the thin faces, slender frames, sallow complexions, and general physical degeneracy of the American are due to this cause. A similar result is fast being produced here by the absurd and pernicious practice of our youth, who seem to consider it an act of manliness to be seen with a pipe or cigar in their mouth. I do not, however, intend to lay all the blame on tobacco, for the Americans, I am aware, also greatly impair their digestive powers by the rapid manner in which they bolt their food, without allowing themselves sufficient time for the proper performance of mastication.

But—to continue the course of the Chyme—

the saliva having changed the starchy matter into sugar, and the gastric juice dissolved the fibrin, and the bile having saponified the fatty bodies, the pancreatic juice having moreover assisted the saliva and converted the fatty acids into the condition of an emulsion, the whole mass is now changed in its composition, and the substance called Chyle, or element of nutrition, is formed from it. The mass meanwhile passes on towards the outlet of the body by a very lengthy canal known as the Intestines, whose great expanse of surface, studded by innumerable ducts, or absorbents, enables every particle of nutrition to be sucked up from it, while the remainder continues its course as fœcal matter. These little ducts gradually concentrate and unite into one of much larger dimensions, named the Thoracic, which, charged with the chyle, empties itself into a vein situated beneath the left collar bone, known as the Subclavian, where the nutrient matter is commixed with the blood. The latter then passing on to the right side of the heart is forced into the lungs, where meeting with the air and being oxygenated by it, it is converted into red, vivifying, or arterial blood, which is transmitted to

the left side of the heart to be propelled by it to all parts of the system, to supply new matter for building up the wasted material of the body.

Having, then, shown how food is converted into a component part of the body, I shall next proceed to consider how Diseases of the Digestive Organs take place. Indigestion will arise either from perversion of the quality or alteration of the quantity of the gastric juice; but the cause of this change may emanate from many circumstances, which will produce an irritation or inflammation of the mucous membrane of the stomach. This deficiency, again, may be produced by an irregularity of the muscular or nervous systems, and debility also will frequently produce the perverted condition of the gastric juice. Mental emotion will also excite indigestion, as will likewise improper food, and extreme exertion before or after eating. The latter remark shows the necessity in a go-a-head colony such as ours of giving adequate rest to the body both before and subsequent to meals. It will be remembered that when speaking of indigestion I alluded to the diseases, or ill-health, under which the Americans suffered in consequence of bolting their

food; and here, where the inhabitants, in their eager pursuit of business, are scarcely less impulsive, care must be taken that we do not fall into similar habits. Pre-occupation of the mind is another exciting cause of indigestion. The arrival of important news, whether good or bad, before eating will frequently altogether destroy the appetite; and the occupation of the mind in dwelling on such subjects both before and after eating will interfere with digestion. Hence the injurious effects of reading a newspaper while at breakfast in the morning, and of a book during dinner, if the contents of either are too interesting and absorbent of the attention. Our merchants and others, who, living at a short distance from town, usually do not receive their newspaper till a comparatively late hour in the morning, are thus apt to suffer from becoming absorbed in its contents, and immediately afterwards taking a brisk walk, the latter of which they imagine will do them much good, whereas in reality both are equally injurious.

Let me explain the reason of this. In order to digest the food properly, the exertion of all the vital powers in the digestive organs is

required, and blood must go there more copiously. Now, if the brain is used, an increased quantity of blood is there required, and there cannot be in both places an abundance at once. If it be divided, both functions are imperfectly performed; thus clearly proving that there is a time for digestion, and a time for thought. The mind should be kept away from business whilst meals are being partaken of; and eating should be the business while at the table. A pleasant chat, or anything to cause exhilaration of the spirits after eating, will assist digestion; but, let it be remembered, above all, that rest after meals is most essential. Some animals to a considerable degree teach the lesson of rest after eating: the serpent, which, at the London Zoological Gardens, swallowed his blanket, lay dormant for a considerable length of time: the ferocious lion or tiger are quiet after meals, and become quite tame for the moment. Man in this respect may be instructed by both.

Inadequate mastication of the food will produce indigestion. Nature has supplied us with cutting, tearing, and grinding teeth, salivary glands, &c. Why not use them? Men who do not masticate their food properly, are, as a

rule, sure to be short-lived; but if they will persist in this habit, I may mention, it is essential that they should frequently drink small quantities of liquid while eating, because by doing so they prevent the food from entering the stomach in a dry condition. This is especially to be attended to by persons who live more on animal than vegetable food, as they require more liquid. Large quantities of fluid taken into the stomach before eating are injurious, inasmuch as the gastric juice will be thus too much diluted; whereas if the liquid be taken in moderation between intervals of swallowing, it will materially assist digestion. While speaking of drinking, I may mention that the partaking of warm tea while at dinner is the most pernicious practice a person can be guilty of, as, irrespective of the dilution of the gastric juice, it tends unduly to relax the muscular tone of the stomach. Taken immediately after dinner, a cup of tea is not less injurious; though if four or five hours are allowed to elapse, it may be partaken of with great advantage, as it then promotes absorption, and cleanses away any debris which may remain in the stomach.

Improperly-cooked food is also another means by which indigestion may be produced; over-cooked meats being much more indigestible than moderately-cooked food. Dyspeptics, therefore, who are fond of what is termed a "bit of the brown," may take a lesson from this. Fried meats, which are for the most part fried in oil or grease, are likewise highly injurious. Meat pies, too, which retain the oils within them, are for the same reason to be avoided.

Eating in excess, as well also as too long an abstinence from eating, will likewise produce indigestion; and sedentary habits are not less injurious. Moderate exercise between intervals of meals is thus beneficial. No explicit rules, however, on these subjects can be laid down. I am frequently asked by my patients whether such and such a thing, or exercise, will be healthy; and I am obliged to reply according to the constitution, &c., of the individual who asks me, the circumstances which surround him, his avocation, and the previous history of the case. This applies more especially as to the question whether such and such an article of food is digestible; and I answer with Dr.

Mandeville, in reply to a similar interrogation by a royal patient, that if the party likes the food, and it agrees with him, it will be beneficial. Nature and inclination, in fact, point out the safest rules in these cases; and these instigations may generally with safety be followed: though I do not concur with the course adopted by the late Sir Francis Burdett, once a celebrated baronet in England, who used to get up at all hours of the night, but never eat except when he was hungry; for I hold it important, on the other hand, that the stomach should be accustomed to regular meals, and that it ought never, if possible, to be subjected to disappointment. Its own cravings will in fact point out this; and a London alderman, a *gourmand*, or even a person in ordinary health will tell the approach of the dinner hour as regularly by the sensation of his stomach as he will by referring to his watch or the parish clock. Hunger, indeed, is nothing more than an indication of want in the system, caused by an irritation of the nerves of the stomach, as thirst is by a dryness of the *fauces*, produced by a similar agency.

Eructation, or belching, is a symptom of

indigestion. It is generally caused by the presence of offending matter, and especially by the latter turning acid, or fermenting, as well as by the stomach secreting hydro-chloric acid. Flatulency is caused by some particles of indigested food remaining in the stomach; fermentation being thus set up, and a gas evolved, which distends or fills that organ with wind. What lesson then does this teach us? Firstly, not to take more food into the stomach than this can digest; and, secondly, if we have thus offended the natural laws of health, to use an emetic for the purpose of easily getting rid of the noxious matter. By this simple remedy an enormous train of evils may be averted, and many a man's life may be saved by the timely administration of a table-spoonful of mustard in a tumbler of warm water, followed by a pint or two of the same if requisite.

Heartburn is another symptom of indigestion. It arises from an irritation of the nervous system in consequence of an excess of acid, and may easily be remedied by the administration of a tea-spoonful of soda and magnesia, or, if either of these cannot be found conveniently at hand, by the simple expedient of rolling up

a few pieces of common soap into pills, and swallowing them. It must not, however, be forgotten that this is but a temporary alleviation of the disagreeabe symptoms, and not a cure of the disease, or permanent removal of the causes that have given rise to it.

Let us now glance at the injurious effects arising from excess of food as well as its deficiency. If more food be taken than is rendered necessary by the waste in the body, the digestive organs are encumbered and unable to perform their function sufficiently. The stomach, in the first instance, becomes distended, giving rise to heaviness, a tendency to sleep, and, if it be highly overloaded, even to apoplexy. Should it by a strong effort succeed in discharging its duty, an undue quantity of nutrition or chyle is secreted, which, being poured into the blood, renders it unduly rich, heavy, and abundant; thus producing plethora, congestion, internal inflammation, and developing the seeds of a host of diseases to which the individual may have a hereditary tendency—such as gout, gravel, apoplexy, consumption, &c., and even if it do not lead to such serious consequences as these, is almost always followed

by the eruptions of pustules on the face, boils on the body, and general fatness of the system, which interfere so much with personal appearance that the majority of individuals, especially in their youth, or until they have passed the meridian of life, would rather prefer the former, dreadful though they frequently are. Deficiency of food on the other hand, gives rise to a general wasting of all parts of the system, excepting the nervous, which thus often becomes excited in a high degree. The blood becomes thinner, the muscles attenuated; all fat disappears from the tissues, and general weakness ensues. If increased or continued more serious symptoms supervene: the gums become spongy, in consequence of a tendency to scurvy being thus developed; the legs swell, because the blood is unusually thin, and the vessels are too weak to send it up to the higher parts of the body; the stomach itself becomes the seat of inflammation, and diarrhœa follows. Ulcers at last make their appearance in the eye and those parts of the body which usually are not highly vascular. All these symptoms are increased if, besides deficiency of food, the unhappy sufferer also labours, as is generally

the case, under want of pure air, or is confined in a crowded apartment. The evil is aggravated, if he, besides, is subjected to cold, in consequence of inadequate clothing. Fever, and nausea, or sickness, to such an extent that the stomach at last becomes unable to receive sufficient food if offered, are the next symptoms; delirium rapidly follows, and the patient then happily remains unconscious until death terminates his sufferings—as we may every week find on reading a London journal describing the end of the miserable wretches who each day thus expire, whilst their richer neighbours are revelling in luxury or rolling in their carriages, yet nevertheless engendering for themselves, by their plethora and excess, diseases not less fatal.

Derangements of the Liver, and Piles, are diseases concerning which I am frequently consulted by the working classes of this colony, and by the "Fast" young men too, more especially since the recent mania for cricketing broke out—the former, in consequence of the violent labour which they are compelled to undergo since the establishment of the Eight Hours' Movement (the masters, from necessity,

expecting their men to discharge in eight hours the work they were previously accustomed to perform in ten); and the latter, in consequence of their own self-imposed task, which induces them to assume crouching, constrained positions—bending their bodies and rounding their shoulders, instead of expanding their chests,—and placing themselves in such attitudes as to impede the free circulation of blood in their extremities, and thus force it to the liver, giving it a superabundant supply, and gorging all the neighbouring vessels in connexion with it. I regret opposing myself to any popular movement; but when I further reflect that these young men, after their being overheated, frequently throw themselves on the cold damp grass, I am in no degree surprised that they thus become the victims of piles, and I therefore consider it my duty to raise a voice against gymnastic exercises so excessive. When I moreover recall to mind that these youths often complain of pains, or "violent stitches" in their sides, during these exertions, and giddiness, accompanied with headaches afterwards, I cannot but attribute such results to a spasmodic action of the intes-

tines, and undue determination of blood to the brain, in consequence of muscular pressure; and I therefore, both as a citizen and as a surgeon, deem it my duty to suggest that these violent exertions and games, which lead to no useful result, might be to a great extent advantageously supplanted by martial exercises and the volunteer movement, by means of which the chest is expanded, the lungs and circulating organs receive a wider range, the muscular system wholly instead of partially exercised, the individual thus profits, and the country itself may ultimately be benefitted.

I have already mentioned that continued wakefulness disturbs the action of the heart, as well as impedes the circulation in the brain; and, I might have added, frequently thus produces diseases in the latter organ. I may, therefore, now say a word or two on the means by which the brain becomes diseased, and at the same time show how, when it is so, the body suffers also, in consequence of the intimate connexion which exists between them.

One of the means by which the brain will become diseased is that of over-study. Rousseau states that "application wears out the

machine, exhausts the spirits, destroys the strength, enervates the mind, makes us pusillanimous, unable either to bear fatigue or to keep our passions under." The effect of intense study upon the brain can be perceived, for instance, in the student who is reading for prizes—a practice, by-the-bye, most injurious, inasmuch as it exhausts the powers of the frame, brings on bodily weakness and disease, and reacts on the mind, through the intimate connexion subsisting between it and the body, as already explained, very frequently producing inflammation of the brain, and almost always enfeebling it. This custom of giving prizes, I think is most absurd, as it reduces the brain to the condition of a hot-bed, which produces a plant that is beautiful and rapidly developed for the moment, but destitute of all inherent strength and durability; the first rude blast giving it a shock which, from its forced condition and inherent weakness, it is unable to resist. Thus it is with the mind: the student whose brain is in this condition suddenly, perhaps, receives news of some event—joyful, sorrowful, or fearful, as the case may be. The brain is unable to resist the shock, and the

mind gives way; thus confirming the generally received opinion that the brain is the organ through which the mind acts, and proving that where there is mental derangement there is organic disease of the brain. It may be readily understood how any sudden emotion thus affects the mind: a contracted action of the heart causing the blood to rush upwards with violent impetus to the brain, and there producing a lœsion of it.

Excessive evacuations, on the other hand, act upon the brain, by diminishing the bodily powers of the individual, and causing the heart to send the blood to the brain with diminished force, thereby decreasing the proper stimulus and nutrition and enfeebling the mental powers. Enfeeblement of the brain may thus be produced by want of adequate nutrition, want of exercise, sedentary employment, excess in eating, undue stimulus of the brain by alcoholic drinks, and anything in fact which will impair the digestive organs.

Nothing, however, will weaken the brain so much as excessive grief, causing the individual to brood for a length of time over misfortune; and thus it is that we, even at this distance in

the antipodes, so deeply sympathize with the subjects of her Britannic Majesty, and join with them in cordially expressing a hope that her sorrow for the loss of her late lamented husband may not be so protracted as to engender permanent injury to this organ.

Another cause of enfeeblement of the brain is want of exercise of it. The plough-boy, who goes along whistling at the plough for want of thought, is more likely to become an idiot, although strong, healthy, and vigorous, than the unhealthy denizen of a city whose mind is continually in a state of activity, in consequence of his being obliged to provide for the contingencies of the passing hour. For, it is a fact that the brain, not less than any muscle in the system, stands in need of exercise; and the more it is exercised, in moderation of course, the sharper it becomes. Hence the pernicious effects resulting from periods of long and excessive silent and solitary confinement to which prisoners of late years have been sentenced in England. The Americans, it is well known, though amongst the sternest in creation in punishing their criminals, were obliged to abandon this, in consequence of the

unhappy victims becoming equally debilitated in mind and body. Nine or ten months often sufficed to render a prisoner an idiot or insane; but the homicidal practice is still retained in England with all its severity. Mr. Ernest Jones, the Chartist, it is well known, suffered so much that it was necessary to liberate him at the expiry of twelve months; and Vernon, the real leader of that movement, one of the strongest men in existence, having been detained three months longer, left the prison walls so utterly prostrated both in mind and body that he shortly afterwards died in the condition almost of an idiot in Italy, whither some beneficent individuals subscribed a small sum of money to send him in the hopes that he might there recover. In this colony it is even worse, for the men, being constrained to wear a mask, are not allowed to see each other's faces; and from what I have observed, while visiting the prison at Pentridge, I have no hesitation in stating that such punishment is wholly unjustifiable, inasmuch as it impairs the prisoner's means of gaining future subsistence. It may be true indeed that the greatest ruffian is thus *tamed down;* but it is no less certain that his

bodily and mental powers are permanently diminished; while his vicious moral feelings remain wholly unchanged, and he has been thoroughly brutalized—the animal faculties alone remaining. It need, therefore, be no matter of surprise that such men, after their period of servitude has elapsed, return to their former courses; instinct, the only faculty which is left them, leading them to do so, even if their unhappy condition presented any alternative.

As an illustration of the influences of the mind on the body I have mentioned that persons by wearing galvanic rings have imagined themselves to be cured, and have really become so. It is related that Dr. Beddoes, being once about to apply nitrous oxide for a case of paralysis, first inserted a thermometer to the root of the tongue with the view of ascertaining the temperature there; and the patient, thinking this the application of the remedy, at once exclaimed: "Dear me, I feel relieved." The doctor consequently did no more; but expressed his intention of returning next day; when he applied the same instrument precisely in the same manner, with the same result; continuing the practice for a fortnight, at the

end of which the patient not only described himself as cured, but actually was so. The anecdote of the licentious Lord Lyttleton expiring at the exact hour of midnight, as he had been forewarned, or imagined himself forewarned in a dream, is equally well known and attested.

The first symptoms of insanity frequently appear in the most insidious manner; and it is this very fact that should make relations and friends, and medical men especially, be on the *qui vive* to detect it; because it is at this early stage that the malady can most readily be warded off. Whenever a man who has been of a sober turn of mind suddenly becomes a drunkard, or a man whose life has been known to be chaste and pure all at once gives way to coarse indulgence and profligacy—whenever, in fact, a man suddenly gives the lie to his previous life, and becomes gay when he was formerly sullen, or morose when he was formerly cheerful—his nearest friends should immediately counsel him to have recourse to a physician; for they may rest assured that disease is setting in on that man's brain. It is of the utmost importance, too, that this physician should be

of the highest order, or at least highly experienced in the treatment of mental affections; for the disease often makes its way so insidiously, and follows such a slow course of development, that the greatest delicacy and tact are required to discover it; and without an accurate *diagnosis*, there can not only be no certain cure, but any measures employed with the view of giving relief are more apt to aggravate than alleviate the disease. And remedies promptly and judiciously applied, are in this case, above all others, imperatively necessary; for, if the disease is allowed to go on unimpeded, what was originally trifling in its origin, and readily admissive of cure, becomes at last wholly beyond the reach of professional skill.

How then are we to discover this incipient condition of insanity, if the prominent symptoms mentioned above are absent? When a patient presents himself in my consulting room, my attention is first directed to the particular attitude he assumes. His muscular system, as a rule, being weak, although he may be a powerful man, his body generally slightly stoops; and he moves about in a restless condition, evincing more or less of nervous

twitching; his face will have a certain vacant look; the cheeks appear to have fallen in; the eyes to be sunken, and having a dull heavy look; or, the opposite may occur, and they may have a dazzling wild appearance, but always accompanied by a wandering gaze. If spoken to concerning his health, I find that his attention cannot be fixed; and he either takes a long time to answer any interrogation, or he may reply to it immediately: in the former instance seeming unable to understand it; in the latter, understanding, but immediately forgetting it, as I find on recurring to the subject a moment afterwards. The history of the case generally shows that there has been a slight confusion of ideas, and that his memory is no longer so retentive as before, that he has to a certain extent avoided society, and become considerably altered in his disposition. His own attention may perhaps have been directed to his condition in this early stage of the disease by remarking that, having read a page of a book, he has, on turning the leaf, wholly forgotten the subject, and he has to re-read, frequently several times, before he can impress it on his mind. On feeling his pulse, I gene-

rally find it weak, but rapid and irregular; except in the case where inflammation of the brain is about to set in. His tongue has a peculiar flaky look, furred in the centre, and red on the edges.

In this stage of the disease, it can generally be treated with facility. My practice is to conceal his condition as far as possible from him, and to pay especial attention to the state of his digestive organs, as well as general health; inasmuch as very frequently long protracted costiveness and disordered liver may have given rise, through sympathetic action of the brain, to the mental derangement under which he suffers. I hold it is one of the most pernicious courses a medical man can adopt to allow the patient to become aware of his condition; for the moment he is so, the disease almost invariably will make rapid progress. Expediency and humanity alike support me in this; for the disease is thus more rapidly arrested, and I consider it an act of cruelty to make the patient aware of his unhappy state, if it can be avoided, inasmuch as such knowledge invariably increases his sufferings tenfold, by indicating that the secret which he had supposed buried

within his own breast is thus patent to the world. It is of the utmost importance indeed, in my opinion, to prevent this; for when the patient is once aware of it, and, above all, knows that others are so too, he dwells so much upon the subject as generally greatly to augment the disease; whereas by the practice I adopt, I usually find very little difficulty, in the earlier stages of the malady, in restoring him to society.

These are of course but general symptoms, and a general outline of my mode of treatment. In my forthcoming works on "Obstacles to Marriage," "The Infirmities of Age," and "Diseases of Professional Life," I shall take a more fitting opportunity of recurring to the subject and enlarging upon it, as well as on many other topics which I have been obliged to allude to but cursorily here.

CHAPTER III.

THE MEANS OF AVOIDING DISEASES.

HAVING shown how Diseases in many instances are caused, and the nature of them, and demonstrated the Physiology of the subject, I shall now endeavour to point out how, the knowledge thus possessed by my readers, may be turned to practical advantage. I feel assured that, after perusing the preceding chapters, they will be surprised, not at the existence of disease, but that they should be able to escape it for an hour, when they consider how complicated the body is, and how many dangers constantly menace it—such as, for instance, gluttony, inebriation, libertinism, and many wholly irreprehensible causes, especially exposure to cold, malaria, and inadequate food.

My object is to impart to the million a thorough knowledge of the laws which govern health, and information on a subject which has hitherto been too much shrouded in mystery by my professional brethren. To assist the progress of Truth has been my sole object in

publishing this work and those volumes which are to follow.

Amongst the many subjects which, in the course of this chapter, I must glance at, nothing, in my opinion, is so important as Diet, and a competent knowledge of it, both as regards quality and quantity, digestibility and indigestibility, nutritiousness and the reverse.

With regard to Quality, I would first draw the attention of my readers to the influence which food exerts upon the mind; for the temperament, the character, and peculiarities of a nation materially depend upon its food. The Italian, for example, who lives upon his maccaroni and his fruit, or the Frenchman, who subsists for the most part on light dishes, is lively in disposition and quick in apprehension. The Englishman, on the contrary, who is devoted to his roast-beef and plum-pudding, and dissatisfied unless he each day obtains at least two solid meals of animal food, is more heavy and sedate. As an instance of the effect of food upon the mind, I may mention that Garrick, the renowned actor, was in the habit of varying his diet according to the character

he was about to play. When about to perform the part of a lover, he would take fowl; when doing the "heavy business," he would eat beef; and when preparing to act the "double-dyed villain," he would take roast pork for his dinner. It is recorded too of Macready, the eminent tragedian, that he would devour two raw, or remarkably underdone, chops of the latter, before he appeared in such *roles* as Richard the Third, Shylock, and Macbeth, that he might "work himself up" to the due pitch of ferocity; and it is a well-known fact that the successes of Wellington in the great Peninsular War were mainly due to the excellence of his commissariat, on which he invariably bestowed the utmost attention, being well aware how much the strength, endurance, and other qualities of the British soldier depended on his food. I may add that the sailor is equally affected by it, as proved by the Statistical Report of the Health of the Navy, from the years 1830 to 1836 inclusive, in which it is stated that scurvy, putrid ulcer, malignant dysentery, and fever allied to that of jails, suddenly swept off the greater portion of many ships' crews, and well-nigh depopulated fleets;

the document going on to remark that the necessary evils of war, whether arising from battle or shipwreck, were trivial when compared with these tremendous calamities which might have been avoided.

I have now to speak of Quantity of food. This should be regulated according to the wastes of the system. The best way to ascertain whether the waste has been supplied, in other words, when sufficient quantity has been taken, is to allow our appetites to be the judge. This is the plainest and most accurate rule I can lay down. Of course, allowance must be made for deceptions arising from incentives to appetite, such as piquant sauces, and other means of exciting a desire for food. Dr. Abercrombie, of Edinburgh, the celebrated author of "The Intellectual Powers," and many similar works which stamped him as the first physician of his day, in allusion to this subject, says: "I believe that every stomach, not actually impaired by organic disease, will perform its functions if it receive reasonable attention; and when we consider the manner in which diet is generally conducted, both in regard to quality and to the

variety of food and drink which are mixed up into one heterogenous mass, instead of being astonished at the prevalence of indigestion, our wonder must be that, in such circumstances, any stomach should be capable of digestion at all. In the regulation of diet, much certainly is to be done in dyspeptic cases, by attention to the quality of the articles that are taken; but I am satisfied that *much more depends* upon the quantity; and I am even disposed to say that the dyspeptic might be almost independent of an attention to the quality of his diet, if he rigidly observed the necessary restrictions with regard to quantity." Nearly every ailment arises from overfeeding in the first instance. I have shown how the liver becomes affected, how obesity is produced, how the head sympathizes with the stomach, and how ultimately, by the derangement of this organ, the brain becomes diseased; how plethora is thus produced in the blood-vessels, giving rise, upon the slightest cause, to congestions and inflammations, bowel complaints, apoplexy, and paralysis; and all from overfeeding, or putting more into the stomach than the waste of the system requires for its restoration. It is a pity that

epicureans who thus gorge themselves cannot use the invention mentioned in the *Circulator*, a journal devoted to gourmands, and of some notoriety in its day, which mentions the discovery of an apparatus by means of which the stomach may at any time be emptied of its contents. "This invention," he says, "must be of the utmost importance to the votaries of gastronomy, and all those who place the *summum bonum* in mastication and copious potations: with the aid of this invaluable instrument [which seems to have been similar to the stomach-pump] the lives of *bon vivants* may become a perpetual feast, and all their days be spent in the blissful process of filling and emptying the abdominal laboratory."

Many have attempted to lay down a law as to how much a man ought to eat; but the one already mentioned—namely, that of following the appetite—is the best criterion. Several persons, both professional and non-professional, have endeavoured to impose a given quantity as a law. They have starved themselves for a length of time, and found out the amount of waste in the system, and thence computed that men ought to take only an equivalent to supply

that waste. This may be very good in theory, but is inapplicable in practice; for a man may be differently situated according to the circumstances which surround him—as, for instance, the climate in which he lives, the exercise he has to undergo, and the activity of his brain—and he may have more waste in his system at one time than another, and therefore requires a larger amount of food. The Laplander, for example, takes large quantities of fat into his body, as, his climate being cold, he needs a large quantity of carbon to maintain the animal heat; whilst on the contrary, the Arab, who lives in a warm climate, feeds on a few dates. We all remember the scene recorded by the great novelist, Sir Walter Scott, in the *Talisman*, of the meal partaken of by the Christian Knight and the Saracen; a handful of dates, and a morsel of coarse barley-bread sufficing for the latter, though dried hog's flesh in large quantities, the abomination of the Mussulmen, was required for the other; the drink of the one, too, being pure water, while that of the first was taken from a mysterious leather bottle, containing doubtless something stronger than that element.

As a rule it may be laid down that the man who takes much exercise requires a larger quantity of animal food than one who follows a sedentary occupation, and of course should subsist on a smaller and a lighter diet. This demonstrates the absurdity of the doctrines of Canaro, the Venetian; Stilites, the columnar philosopher; Hilario; and Dr. Spark, who attempted to lay down a fixed law limiting the quantity of a man's diet to the smallest possible extreme, like the sagacious Irishman who flattered himself that he had make a great economical discovery by gradually withdrawing a straw a-day from his horse until he had brought it down to two, and might have realized his great scheme of causing it to live upon one, had not the animal, unfortunately for the success of the design, suddenly died.

As an instance of the small quantity of food on which a man may exist and yet preserve his body in full strength, I may quote the case of an English miller, named Thomas Wood, recorded by Dr. Robertson in his work upon Diet:—

"Thomas Wood appears to have been subject to various disorders till he was thirteen years of age. He then had the small pox in a favourable way;

and from that time became healthy, and continued to have no complaints to the age of about forty-three years. From his attaining the age of manhood to this period, but especially during the latter part of the time, he indulged himself, even to excess, in fat meat, of which he used to eat voraciously three times a day; together with large quantities of butter and cheese. Nor was he more cautious with regard to strong ale, which was his constant drink. About his fortieth year he began to grow very fat; but finding that he had a good appetite, and digested his food without difficulty, and that his sleep was undisturbed, he made no alteration in his diet. In his forty-fourth year, however, his sleep began to be disturbed, his digestion became impaired, the state of his bowels became irregular and uncertain, and he began to suffer from headache and vertigo. Moreover, he had almost a constant thirst, a great lowness of spirits, violent rheumatism, and frequent attacks of the gout. He had likewise two epileptic fits; but the symptom which appeared most formidable, was a sense of suffocation which often came on him particularly after his meals. He continued thus about a year. In August, 1764, he began to eat sparingly of animal food and only drank one pint of ale. Since May, 1766, he has drank no fluid whatever except medicine, and on July, 1767, he eat last of animal food, having previously discontinued taking cheese and butter. His exclusive diet for years

consisted of one pound of coarse flour, such as sea biscuit is made of, and sufficient water to render it soft and tender. This pudding was boiled, and eaten at twice, without any addition whatever; the first half being taken at four or five o'clock in the morning, the second half at noon. He neither required nor took any additional liquid than that contained in the pudding. Under this diet he more than regained the vigour of his youth, put to flight a whole host of serious diseases, was active, energetic, and industrious, and demonstrated upon how small a quantity of food, and how simple a diet, life and health may be secured and enjoyed. A few days before his last illness he had travelled on horseback more than sixty miles, without any sense of fatigue. He died in May, 1783, from inflammation, through riding with coat and waistcoat unbuttoned (as usual) in the rain."

Having thus pointed out the futility of attempting to lay down any fixed rule on this subject, it may, perhaps, be considered inconsistent in me to endeavour prescribing any certain quantity of diet; but as something of the nature may be expected from me, I may mention that in my opinion a pound of bread, a pound of vegetables, and three-quarters of a pound of animal food a day suffice, in this colony, for the proper support of an ordinary

man; but, of course, as before stated, due regard must be had towards the state of the health, amount of exercise, &c. Much, I may add, depends upon variety of food. It is not salubrious to live long upon any species of animal food. The person who takes beef one day should endeavour to have mutton on another, veal on a third, fish on a fourth, poultry on a fifth, lamb on a sixth, pork on a seventh, &c.; for though individually many of these are less nutrient than beef or mutton, they become more so in consequence of the variety. *Tougours perdrix* is proverbially disagreeable.

I have hitherto spoken of undue quantities being taken; but if there be a deficiency in food, the result is equally bad, more especially if an extra amount of exercise be taken; for then we shall find consumption engendered, the waste being in excess, and there being nothing to keep up the animal heat and repair the loss. The body has, therefore, partially to live on itself; and hence we find emaciation and premature old age, speedily terminating, unless relieved, in death. I need not, of course, allude to death by starvation here, as in this colony it is comparatively uncommon.

Having thus spoken of Quality and Quantity, I now come to the subject of Digestibility and Indigestibility of Food. In speaking of Digestibility of Food, I of course allude to man in his healthy condition, and what I mean by Digestibility is the time that elapses between its entrance into the stomach and exit in a solvent condition from that organ. Some kinds of food are more readily dissolved than others; but the digestibility of food must not be confounded with its nutrient quality. Rice, for instance, will digest in one hour, and fowl requires four hours; but the former contains very little nutriment, while the latter possesses a large amount. Again, in accordance with the manner in which food is cooked, will be its digestible capacity. Roasted beef, for example, highly cooked, will digest in three hours; if it be what is termed "well done," three hours and a-half; when fried, four hours are necessary. Certain adjuncts may be used in the culinary process which will materially aid digestion, especially salt; but this must not be in excess, for while beef boiled with a small quantity of salt will digest in two hours and three-quarters, four hours and a-quarter are necessary if the

salt be in excess, or the beef be what is called "corned." Different articles of food, of course, vary in digestion; mutton being more digestible than beef, the latter than pork; the flesh of adult animals more so than that of young, and wild animals than tame. Hence Welsh mutton and Scotch mutton, in consequence of the much greater scope given to the animals on their native hills than in the English glades, are much more digestible than Southdown mutton; and our sheep, for a similar reason, much more so than those at home. The following table will give a brief idea of the digestibility of the various articles ordinarily in use for food:—

TABLE SHOWING THE MEAN TIME OF DIGESTION OF THE DIFFERENT ARTICLES OF FOOD.

Articles of Food.	Mode of Preparation.	Time Required for Digestion
		H. M.
Rice - - - -	Boiled	1
Pig's feet, soused -	Boiled	1
Tripe, soused - - -	Boiled	1
Eggs, whipped - -	Raw	1 30
Trout, Salmon, fresh -	Boiled	1 30
Trout, Salmon, fresh -	Fried	1 30

Articles of Food.	Mode of Preparation.	Time required for Digestion
		H. M.
Soup, barley	Boiled	1 30
Apples, sweet and mellow	Raw	1 30
Venison steak	Broiled	1 35
Brains	Boiled	1 45
Sago	Boiled	1 45
Tapioca	Boiled	2
Barley	Boiled	2
Milk	Boiled	2
Liver, beef's, fresh	Broiled	2
Eggs, fresh	Raw	2
Codfish, cured, dry	Boiled	2
Apples, sour and mellow	Raw	2
Cabbage, with vinegar	Raw	2
Milk	Raw	2 15
Eggs, fresh	Roasted	2 15
Turkey, wild	Roasted	2 18
Turkey, domestic	Boiled	2 25
Gelatine	Boiled	2 30
Turkey, domestic	Roasted	2 30
Goose	Roasted	2 30
Pig, sucking	Roasted	2 30
Lamb, fresh	Broiled	2 30
Hash, meat and vegetables	Warmed	2 30
Beans, pod	Boiled	2 30
Cake, sponge	Baked	2 30
Parsnips	Boiled	2 30
Potatoes, Irish	Roasted	2 30
Potatoes, Irish	Baked	2 30
Cabbage, head	Raw	2 30
Spinal-marrow	Boiled	2 40
Chicken, full grown	Fricassee	2 45

Articles of Food.	Mode of Preparation.	Time required for Digestion	
		H	M.
Custard	Baked	2	45
Beef, with salt only	Boiled	2	45
Apples, sour and hard	Raw	2	50
Oysters, fresh	Raw	2	55
Eggs, fresh	Soft boiled	3	
Bass, striped, fresh	Broiled	3	
Beef, fresh, lean, rare	Roasted	3	
Beef steak	Broiled	3	
Pork, recently salted	Raw	3	
Pork, recently salted	Stewed	3	
Mutton, fresh	Broiled	3	
Mutton, fresh	Boiled	3	
Soup, beans	Boiled	3	
Chicken soup	Boiled	3	
Aponeurosis	Boiled	3	
Cake, corn	Baked	3	
Dumpling, apple	Boiled	3	
Oysters, fresh	Roasted	3	15
Pork steak	Broiled	3	15
Pork, recently salted	Broiled	3	15
Mutton, fresh	Roasted	3	15
Bread, corn	Baked	3	15
Carrot, orange	Boiled	3	15
Sausage, fresh	Broiled	3	20
Flounder, fresh	Fried	3	30
Catfish, fresh	Fried	3	30
Oysters, fresh	Stewed	3	30
Beef, fresh, dry	Roasted	3	30
Beef, with mustard, &c.	Boiled	3	30
Butter	Melted	3	30
Cheese, old, strong	Raw	3	30

Articles of Food.	Mode of Preparation.	Time required for Digestion
		H. M.
Soup, mutton	Boiled	3 30
Oyster soup	Boiled	3 30
Bread, wheaten, fresh	Baked	3 30
Turnips, flat	Boiled	3 30
Potatoes, Irish	Boiled	3 30
Eggs, fresh	Hard boiled	3 30
Eggs, fresh	Fried	3 30
Green corn and beans	Boiled	3 45
Beet	Boiled	3 45
Salmon, salted	Boiled	4
Beef, fresh, lean	Fried	4
Veal, fresh	Broiled	4
Fowls, domestic	Boiled	4
Fowls, domestic	Roasted	4
Ducks, domestic	Roasted	4
Soup, beef, vegetables, and bread	Boiled	4
Heart, animal	Fried	4
Beef, old, hard, salted	Boiled	4 15
Pork, recently salted	Fried	4 15
Soup, marrow bones	Boiled	4 15
Cartilage	Boiled	4 30
Pork, recently salted	Boiled	4 15
Veal, fresh	Fried	4 30
Ducks, wild	Roasted	4 30
Suet, mutton	Boiled	4 30
Cabbage, with vinegar	Boiled	4 30
Suet, beef, fresh	Boiled	5 3
Pork, fat and lean	Roasted	5 15
Tendon	Boiled	5 30

Amongst the subjects of the animal kingdom that are indigestible we may mention Fat—fat being much more indigestible than Lean. I am aware this may be questioned, for medical men are frequently told by bilious individuals, that they can take fat bacon and digest it; but the impunity arises from the circumstance that the bile, entering the stomach, combines with the fat and forms a saponaceous compound, which, passing into the Duodenum, is readily absorbed. Fat, however, undoubtedly, when taken in excess, is generally injurious to indigestion; and hence wild animals, as I have already mentioned, which, in consequence, of their great muscular exertion have comparatively little of it, are more readily digestible than tame. In "well-grained" meat, however, as it is termed—that is, where the fat is well incorporated with the lean, as in streaky bacon—it is far from being an impediment to digestion. Culinary art is serviceable here, too; for pie-crust, which is usually considered very indigestible, may be rendered much less so by thoroughly incorporating the fat or greasy matter with the flour which enters into its composition.

For the benefit of cooks I may here extract

a passage from a work by Dr. Thos. Chambers, of London—a physician of considerable standing, though not the late distinguished practitioner of that name—on "Digestion and its Derangements." "A familiar example," he says, "of the mechanical differences in the form of starchy food, are the two sorts of pie-crust known as 'short' and 'puff' paste; in the former, the butter is thoroughly incorporated with the dough, so as to divide the starch granules one from another, and permeate the gluten like a sponge; while in puff pastry the dough forms thin but solid layers, like a quire of buttered paper. If the teeth are imperfect, or the mastication careless, the latter is well-known to form in the stomach a solid mass, which is difficult of solution, in the upper part of the intestines; whilst the easily broken part (the 'short') is mixed with the rest of the food, and, if the butter is fresh, receives a very different character from its employer."

The latter phrase, "employer," is very vague, —distinguished by all the vagueness which the "regular" faculty are so fond of indulging in—but the author, doubtless, means *consumer;* and his observations, confirming those I have

already made, are correct in the main. Fresh butter, sweet salad-oil, and mild fat agree well, in general, with the stomach, when properly combined with starchy food, and in emaciated persons are often taken with great advantage. Cod-liver oil, too, although at first most offensive to the taste, is, for the same reason, readily retained upon the stomach; and thus ultimately becomes so agreeable that the patient entirely forgets the unpleasantness of its taste.

Cooking, I may here mention, even in its simplest operations, is of more importance than is easily imagined. Take, for instance, such a simple example as boiling a piece of beef. If it be thrown into cold water and thus slowly boiled, the albumen is dissolved, and the strengthening part is dispersed throughout the liquid; the fibres of the meat, of course, becoming hard and innutritious. But if it be thrown into boiling water and afterwards kept at a temperature of about 180°, the exterior of it becomes coagulated, the albumen is thus preserved, and the meat becomes soft and juicy, nutritious, and easily digestible. Hence cooks have been held in high estimation—especially in France, and formerly in ancient Rome, as

they at present are, even amongst the Faculty, in England. Caréme, a celebrated French cook, was secured by George the Fourth at a salary of £1,000 a-year; but so high were his services valued that he stayed with him but a short time, in consequence of the high offers made for him by the Emperors of Prussia and Austria; even these he refused, but was at last triumphantly secured by Baron Rothschild at a cost which must almost have brought tears into the eyes of that wealthy Hebrew. Mark Antony, it is well known, presented his cook with a whole town, in reward of cooking a dish to the satisfaction of Cleopatra; and the late Sir Henry Halford, the physician of three generations of royalty in England, owed half his fame to the good terms on which he invariably stood with the cooks of his patients, and the valuable information he imparted to them.

Amongst indigestible subjects, I may mention, are vegetable fibre—such as the stalks and outer leaves of cabbage and cauliflower—maize-flour, rye-flour, peas'-meal, turnips, carrots, parsnips, broad beans, mushrooms, rhubarb, vegetable marrow, radishes, onion, cucumber, plums, melons, all kinds of nuts, and

more especially those which contain a quantity of oil. In animal matters we may rank as indigestible, pork, veal, goose, duck, lobsters, eels, salmon, and herring. I enumerate here, of course, only the articles which are commonly used in every-day diet; being unwilling to overburden the attention of the reader, or unnecessarily to swell my pages.

Amongst those substances which are indigestible, but much used in the colony, I may, however, mention potted and preserved meats from home; and the various kinds of pickles which are sent out here. I do not mean to say that a small quantity of salt is injurious, or that a similar proportion of vinegar is deleterious; on the contrary, they are each conducive to digestion; but when taken in large quantities, as they generally are here, they prove highly noxious.

As a rule, animal food is more easily digested than vegetable; thus proving the absurdity of the statement that man was designed to live on vegetable diet. His teeth—divided into incisive, tearing, and molar—and the whole structure of his digestive organs indicate that he was destined to be omnivorous. In fact,

animal food is more necessary for the preservation of his health, and strength, than vegetable, though he can subsist longer exclusively on the latter. A man with weak digestion, however, should avoid exclusively a vegetable diet; because, amongst other reasons, six or seven fold bulk of the latter is required. A man, for instance, would have to eat eight pounds of potatoes to derive from it the same amount of nutrition as from half-a-pound of beef, and the digestive organs are thus overloaded and over-distended—often, indeed, to the extent of inducing paralysis. No man, therefore, who is doing a large amount of work, should even attempt to exist solely on vegetable diet.

This now brings me to the subject of Nutritious and Innutritious Food. By the term *Nutritious*, I would be understood to imply that the food contains within it a certain quantity of matter which can be more or less easily assimilated to our system. This nutritious matter in animal food is Fibrin and Albumen: in vegetable substances, however, it is Gluten, which corresponds with Fibrin in the animal. There is another substance which is a compo-

nent part of vegetable matter—namely, starch; but it is not nutritious, and corresponds with the Fat in the Animal; both of which, when taken into the system, generate heat, and add plumpness and fat to the form.

In proportion as the digestibility of food varies, so does the latter vary in its nutrient capacity, as I have already remarked when mentioning that half a pound of beef contained as much nutrition as eight pounds of potatoes. Although, however, it contains as much nutriment, the eight pounds of potatoes will contain a much larger quantity of heat-generating matter. It may, therefore, be asked—How is it that the Irishman, who lives almost exclusively on potatoes, is able to sustain life? I reply, that it is in consequence of the milk which he uses along with them; this fluid, containing every species of nutriment, and being one of the most readily digestible materials we can possibly have. It is one which we have always at our command, when prescribing for a patient with weak digestive organs; and as a proof of its nutrient qualities it is only necessary to mention that it is the element provided by nature for the rearing of our young. A little

sugar or salt, I may add, materially increases its digestive qualities.

Now, although a substance may contain nothing but nutrient qualities, still something more is required, in order to give it bulk; for the digestive organs require distention also. Hence Portable Soups, &c., though highly concentrated, require dilution before they can adequately nourish the body; and it thus happens that those unhappy beings who in Africa, some parts of Asia, and the North of Europe, are constrained to live on what is termed "Animal Earth," derive their nutrition from the small quantity of animal matter which it contains, while their appetite is sated by its bulk. An excess of bulk, on the other hand, is injurious; and it is thus that the Aborigines of this country have swollen bellies in consequence of the vast quantities of innutritious food they pick up. The reverse of this is shown by the manner in which race-horses are raised: being fed chiefly on oats, and allowed only a small quantity of hay, their abdomen is proportionately slim.

Amongst the nutritious animal substances I may especially enumerate mutton, beef, fowl,

turkey, hare, partridge, venison, oysters, Murray cod, guard fish, silver bream, whiting, and mullet. With respect to our vegetables, it may be laid down as a rule that those which contain least water are the most nutritious. The following list will indicate the nutrient qualities of the chief of them :—

	Azotized Nutriment.
Bean Meal contains	25 parts in 100
Linseed Meal	23 „ 100
Bran from Wheat	19 „ 100
Scotch Oat Meal	15 „ 100
Semolina	12 „ 100
Barley	11 „ 100
Flour, Wheat	10 to 11 „ 100
Maize	10 „ 100
Hay	9 „ 100
Rice	8 „ 100
Sago, Arrowroot, and Tapioca	3 „ 100
Potatoes	2 „ 100
Wheat Starch	2 „ 100

Having thus discussed the subject of Nutrition and Digestibility, I have now to consider that of Clothing, and several similar topics. But before proceeding to these, I would especially impress upon my readers : 1st. To rest a short time before meals : 2nd. To take time

in eating, and to masticate the food thoroughly, so that the saliva shall be well incorporated with it; 3rd. While eating, devote your attention exclusively to it, though, between dishes, a little exhilarating conversation is beneficial; 4th. The plainer the diet, the healthier it is; 5th. To take a little alcoholic stimulant, wine, or a glass of pale ale, if the stomach be weak; and lastly, to repose for a short time after eating.

With respect to Clothing, the main object is to have a non-conducting substance which will not allow the heat to pass away too rapidly from the body, or external heat to penetrate, and which, at the same time, will not impede any organic function or motion of the body. Why I speak of the latter is, in consequence of the pernicious practice which exists of wearing stays. When I mention this to ladies, they generally reply to me: "Oh, I cannot support my body without them." The reason, however, of this is, as I have to point out to them, that the muscles being thus no longer exercised lose their power, and artificial support is therefore necessary. By persuading my patients gradually to leave off their stays, I gradually bring

into play, by a natural process, the muscles which had fallen into disuse, and I effect this the more readily by suggesting at the same time a few light gymnastic exercises. Persons who present themselves in my consulting room, suffering from the effects of Tight-lacing are generally very pale, but I have remarked that they in general have red noses Now, it may be a very desirable thing to see colour extended over a lady's face, but it becomes the reverse of agreeable to find it concentrated in her nose. The hideous contraction of the chest which it produces—so different from that of the standard of beauty—the Medicean Venus—need not be alluded to; and I mention it solely for the purpose of pointing out the pernicious effects which result from the lungs being thus impeded in their action. The vital condition of the body is thus lowered, and tubercles are formed; while the digestive organs, by means of the compression, are also impaired in the discharge of their functions. To such an extent may this be carried that I remember, on opening the body of a female at Westminster Hospital, the liver was not only compressed, but a mark extended over it exactly corresponding with

the line of the stays; proving how seriously it had been affected by them.

Whilst alluding to the subject of female dress, I may mention that of Crinoline, and I cannot speak too strongly against this most absurd, ungraceful, and pernicious habit, which engenders some of the most serious diseases. By the weight and pressure of the clothes on the haunches, it gives rise to descent of the womb, and produces varicose veins in the lower extremities by stopping the circulation. I could enumerate a vast number of other affections either arising from it or aggravated by it, but I deem it unnecessary, as the practice, I hope, will soon wear out; Dr. Lankaster, the coroner of London, having mentioned that not less than 2,500 females have been destroyed by it, through the medium of fire, in the course of three years in that city—a number exceeding even that of the victims in the memorable fire at the church of Santiago.

I have elsewhere adverted to the gross and culpable manner in which mothers dress their children, under the idea of hardening them. When we consider the variable nature of our climate, I am sure attention to that subject

need not be insisted upon any more by me. A proper attention to the warm condition of the feet is also most essential to avoid disease both of the brain and chest, and abdomen. If the feet are damp and cold, the blood deserting them must go to some internal organ. If this continues any length of time, congestion sets in. In the winter, cork or gutta percha soles are excellent means of warding off wet. I cannot, however, too particularly warn my readers against wearing India rubber goloshes, and waterproof coats; for both these have the effect of retaining the perspiration, frequently giving a thorough damp condition to the skin, and producing cold. If, however, these Mackintosh coverings are not too close to the skin, then, by their impenetrability they give a great amount of protection, whilst the moisture from the body is absorbed by the covering within the waterproof. It is an excellent thing to have openings to allow the vapour to escape. Woollen coverings next the skin are best; they are non-conductors of heat, preventing the warmth from escaping. By their presence they create an amount of irritation and friction highly beneficial, by determining the heat to the skin,

and they absorb all perspiration. Next to this I may mention thick porous silk, cottons, &c. It is very desirable to change the linen each night on going to bed, and even, if possible, it is wise to sleep without your flannel waistcoat, because you feel the comfort of the warmth it imparts during the day; and worn at nights the pores become too much relaxed.

In this colony we are subject to Sun-stroke, and frequently we perceive in the papers accounts of accidents of this kind. In the main these are due to an insufficient covering of the head. At present we put up with the old conventional hat, resembling more a chimney-pot than anything else. We should take an example (with an addition) from the Eastern head-dress, or turban. This is the best covering for our hot climate; for it keeps both heat and cold out, and it is proverbial that that which keeps in warmth will keep out heat. These coverings should be of spongy silk or wool, which would allow the exhalations to pass through, and should have a peak of leather lined green within, and white outside.

Amongst the means of avoiding disease I might mention here that which appears to have

been much neglected—I allude to LIGHT. The important influence of this agent on vegetation is well known. Place a plant in a dark room for a short time, where it shall have free access to air, &c., yet its leaves will become dusky and pale, or "etiolated," as it is termed. Potatoes will certainly throw out roots and branches in a dark place, but these will be weakly and bleached; the very plant seems conscious of this work, and leans always in such a way as to expose itself to the most light. In like manner do we thus find that light influences animal life. How few are there who allow their windows to be dirty and covered with cobwebs, or who live and sleep in rooms the windows of which are so situated by overhanging houses as to prevent a free ingress of light, that know or think of the evils arising from it? I will give here one quotation from Mr. Bagshaw Ward's examination before the Commission on the State of Towns:—

"Have you directed your attention to subjects connected with the health of the humbler classes in crowded communities?—I have.

"To what points have you particularly directed your attention?—The influence of light and of air freed from deleterious particles.

"What observations have you to make on these points?—During a practice of thirty years in a densely-populated neighborhood, my attention has been repeatedly drawn to the influence of light, not only as a most efficient means of preventing disease, but likewise as tending materially to render disease milder when it occurs, and more amenable to medical and other treatment. Dupuytren, I think, relates the case of a lady whose maladies had baffled the skill of several eminent practitioners. This lady resided in a dark room (into which the sun never shone) in one of the narrow streets of Paris. After a careful examination, Dupuytren was led to refer her complaints to the absence of light, and recommended her removal to a more cheerful situation. This change was followed by the most beneficial results. All her complaints vanished. Sir James Wylie has given a remarkable instance of the influence of light. He states that the cases of disease on the dark side of an extensive barrack at St. Petersburgh have been uniformly for many years in the proportion of three to one to those on the side exposed to strong light. The experiments of Dr. Edwards are conclusive. He has shown that if tadpoles are nourished with proper food, and exposed to the constantly-renewed contact of water (so that their beneficial respiration may be maintained), but are entirely deprived of light, their growth continues, but their metamorphosis into the condition of air-

breathing animals is arrested, and they remain in the form of large tadpoles. Dr. Edwards also observes that persons who live in caves and cellars or in very dark and narrow streets, are apt to produce deformed children ; and, that men who work in mines are liable to disease and deformity beyond what the simple closeness of the air would be likely to produce."

Further, I have no doubt at all that it is due to the extreme amount of light that we get the black colour of the negro and other kindred races. The above I think will in a sanitary point of view show the important action that light has on the animal economy.

Free Ventilation is another agent in avoiding disease. Dr. Arnott, when speaking of Venti lation, says :—" These aërial movements are to man what the constant gliding past of a clean river is to the fishes which inhabit it; and as certainly as we should destroy the trout of a stream by confining them in a small portion of their watery element until it became a dirty putrid puddle, or, as we should distress and injure them by confinement and privation, in a degree, so do we destroy or injure human beings, when we too closely confine around them a portion of their aërial element."

I find that the great majority of my patients in the consulting room, at my audiences and my lectures, seem to be astounded when I call to their minds a fact with which they are all pretty well familiar, namely, that as a rule they take the smallest rooms in the house and turn them into bed-rooms, whilst the larger and loftier are used as parlors or drawing-rooms—rooms in which they seldom enter more than once in the twenty-four hours, if even that, whilst in their bed-rooms they stay from seven to ten, or even twelve hours, continually inhaling the air, and vitiating it by the exhalations both of breath and body. When we consider that a man breathes in twenty-four hours 3000 gallons, or sixty hogsheads of air, and that he exhales from his lungs carbonic acid gas, the most deleterious of all the gases, we can form some idea of the necessity of having, in the first place, large and lofty sleeping-rooms, and at the same time, means of entrance for the fresh, and exit for the foul air. I have converted what was formerly my drawing-room into a bed-room. Many of my friends are astonished; "What," exclaim they, "take the best and largest room in the house for a bed-room?" My answer is,

I stay longer in it than in any other room, and therefore vitiate more air, and require a larger volume of atmosphere, to breathe. But not only do I find that persons sleep in the smallest rooms, but they also, for fear of getting a free supply of air, fill up all crevices, list the bottom of the doors, and still further surround themselves and beds with curtains, thus keeping within the breathing part of the air which surrounds them filthy and often breathed atmosphere. They are then surprised on rising in the morning to find themselves unrefreshed and as if they had not slept. Why is this? A free supply of pure air arterialises the blood and when the blood is freshly arterialised, the excess of carbon is got rid of, the blood stimulates the brain and invigorates the nervous system, and the brain experiences an amount of buoyancy and exhilaration of spirits; but if this important change does not take place, the blood, loaded with impurities, passes to the brain in a sluggish manner, and a dull stupid feeling is engendered. In Melbourne and on our digging townships, where room is scarce, the lodging-houses are crowded, and I am frequently nearly stifled on entering one where

there are a number sleeping together. In London, this gives rise to a smell, which I remember we used to term "Ramp," or "Poor's Smell;" and I have no hesitation in saying, notwithstanding the favourable and painstaking report sent in by our worthy Inspector of Lodging-houses, that, unless great supervision takes place in some of those quarters I could mention, fever will break out in its worst form, namely, of a low typhoid character, and that with the horrible condition of the drainage of the city, and the amount of decomposing animal and vegetable matter, will bring a devastating plague, not confined only to our poorer classes, but reaching those parties who imagine, that by living in the suburbs, they will escape infection, and therefore interest themselves but little in this question. They must not, however, forget that they come into town to business—that they will be stricken, perhaps, at their counting-houses; or the "Poor's Smell" and contagion may seize upon their clothes, and they may take it into the bosoms of their families, and thus strike down the little one who comes clinging to them to give the home-welcome kiss. Every one is interested in this

question, high and low, rich and poor. So are they also in the question of drainage. In another part of this work I showed the importance of Sanitary Reform. I feel I must make a quotation here, which is *apropos* to the present condition of others, and in fact, all the principal cities of the neighbouring colonies. I can speak from personal observation of Adelaide, where I am sure they will pardon me if I point most emphatically to this passage, and request them to at least take the advice I gave them during my lectures upon these subjects. Hobart Town also is defective in any proper means of carry-off the contents of cesspools, &c. Dr. Southwood Smith, when speaking of the removal of necessaries, says :—

"It appears that the streets, courts, alleys, and houses in which fever first breaks out, and in which it becomes most prevalent and fatal, are invariably those in the immediate neighborhood of uncovered sewers, stagnant ditches and ponds, gutters always full of putrefying matter, night-men's yards, and privies, the soil of which lies openly exposed, and is seldom or never removed. It is not possible for any language to convey an adequate conception of the poisonous condition in which large portions of both these districts always

remain, winter and summer, in dry and in rainy seasons, from the masses of putrefying matter which are allowed to accumulate."

Drainage means the carrying off the excreta of animal life, be they solid or liquid. When these excreta are not got rid of, emanations of a certain character are given off from them. What these are, has hitherto escaped detection. Even the most accurate and expert chemist has been unable to detect them. He may certainly find azote, carburetted hydrogen, ammonia, &c., in some places; but he will not be able to detect them in another, and yet the same effects are produced. No stinks even may be present, but decomposition will be going silently on, though not perceptibly so. Stagnant water is there, everything looks healthy—the very plants surrounding it are greenest: still, drainage not being there, Fever will complete its work. Then, if this is the case when we have no smells, how necessary must it be to take precautions when we have stinks and abominable smells under our noses, and decomposition plainly taking place before our very eyes?

What ventilation is for removing, by free currents of air, noxious gases from a room, so

is drainage to remove poisonous matters from a city. What a disgusting condition are we not reduced to in this city! Privies overflowing—the contents percolating into the surrounding soil, and flowing under the dwelling-houses. Masses of putrid matter in all stages of decomposition allowed to accumulate by the small right-of-ways; a flood comes on, the storm water, not being carried off, passes it into cellars, crevices, &c., the sun heats and dries it up, and shortly this magazine of fever will open upon us and cut us down like the sword of a devastating, relentless enemy.

Talking of miasma and its injurious influences naturally leads me to say a few words on Contagion and Infection. With respect to the former, I shall be exceedingly brief; inasmuch as I believe but to a very limited extent in its existence. Our Quarantine Laws, which are founded on it, are now pretty generally acknowledged to be based on error; as it is a matter of notoriety that the clothes, &c., of persons who have died of the plague in Egypt, are openly sold to other individuals in public, by whom they are worn, without producing the slightest injurious consequences; and it is not

less authentic, on the other hand, though not so generally known, that the late Emperor of Russia, with the view of testing its existence, ordered a criminal, doomed to die, to be placed in an alleged cholera bed, from the effects of which—on being informed that it was so—he never recovered, although it was really the truth that the bedding and clothes were wholly pure, no unhealthy person even having slept in them. This, of course, proved that death was the result of imagination, or fear. If there be such a thing as Contagion at all, it was not less strikingly evinced by a celebrated physician, who, denying it altogether, placed himself in the bed, still humid, of a man who had just died of the Black Vomit and Yellow Fever, without experiencing from it the smallest injury. I do not, however, here mean to lay down any arbitary rule; for Contagion—that is, communication of diseases by means of touch—certainly exists to a considerable extent, in such diseases as Itch, Syphilis, Gonorrhœa, &c., which are notoriously propagated by it.

But with respect to infection—or communication of diseases by means of the atmosphere, or Inoculation—it is different. No one can

deny the existence of such diseases as Small-pox, Measles, Hooping-cough, Scarlatina, and the more serious affections of Cholera, Typhus Fever, and similar species of pestilence; although these are often modified, too—though they are more frequently conveyed by a peculiar or unhealthy condition of the body. Two persons, for instance, enter an atmosphere infected by any of them; but while one is seized, or infected, by an attack, the other wholly escapes, and this, although both may have been equally uninfluenced by imagination, but differing in constitution, or healthy *status;* one of them, for example, having taken such precautions as are suggested in this book, for the purpose of rendering his body strong, and thus giving it the power of repelling disease, while the other, by neglecting them, and keeping his body in a dirty condition—taking unwholesome food, and living in ill-ventilated dwellings—has gradually rendered his blood susceptible to the infection.

As a means of avoiding Infection, I would, therefore, point out the necessity of cleanliness, of free supply of fresh air, of sound nourishing diet, and a vigorous, or healthy mind. I may

here mention that, testing infection physically, intense cold, or a heat above 120° will destroy it; whilst warmth, moisture, filth, and foul air, will act as a hot-bed in its propagation.

The great importance I attach to cleanliness as a means of avoiding disease, of course, prompts me to add a few words on the subject of Bathing. I regret that the limits of this treatise do not permit me to say more; for few things, I am of opinion, are more important. Nothing can exceed its utility for purposes of cleanliness and opening the pores of the skin. Every individual ought to take a hot bath at least once a month; and the health of almost every one will be much improved by a cold one each morning, or at least by cold sponging, or rubbing the body over with a towel dipped in cold water, and afterwards thoroughly rubbing it dry with a rough German towel. The glow one afterwards thus feels is quite refreshing, and the tone and strength, and insusceptibility to cold, which it imparts to the body are almost incredible. If the shock be too great at first, a little tepid water may be added; but the sooner water at the ordinary temperature can be used the better. In summer, when the bath

can be taken in the sea, it is still more advantageous; as, independent of the invigorating effects of salt water, the limbs are strengthened and the chest expanded, if the individual attempts to acquire the exercise of Swimming, which no boy, or even girl, ought to neglect, inasmuch as it is easily attained, and may often be highly useful, as well as at all times agreeable.

Nothing, I may further state, leads more readily to disease, or is so detrimental to health, as want of Sleep; and it follows that nothing is so conducive to the avoidance of the one and preservation of the other, as the enjoyment of sound refreshing sleep. Infants enjoy this, and require it, above all; passing, in fact, when in health, fully half their existence in this state, and deriving benefit from doing so. The aged likewise require it in a large proportion; females need it also, as a general rule, more than male, especially during pregnancy and while suckling; and the healthy adult male requires seven or eight hours of his existence to be daily passed in it. Want of sleep, of course, produces mental derangement, irritation of the nervous system, palpitation of the

heart, wasting of the body, and accelerates or aggravates almost all the diseases I have mentioned. It may appear unimportant, but I may add, that it is most healthy to repose on the right side, as the liver and heart are thus left more at freedom; and as a means of securing sleep I may mention that of fastening the attention exclusively upon some ideal subject, or physical object, and imitating the long inspiration of sleeping or snoring.

In conclusion, I have only to state that I have endeavoured to lay down the principal laws which govern health and disease; and it has been my object to render them, as far as possible, applicable to these colonies. The works which I have announced in my Preface as intending to follow this—namely, on "Obstacles to Marriage," "The Diseases of Married Life," "Sterility," "The Infirmities of Age," "Diseases Incidental to the various Professions and Trades," and a few similar subjects to which I have long directed my attention—will, I trust, be still more conducive to the public welfare, inasmuch as they elucidate important questions which my professional brethren have bestowed very little attention on, but I have

for many years made the special object of my practice. These works, I may add, are the result of long observation, and nothing will be advanced in them but what has been substantiated by actual experience.

POSTSCRIPT.

THE TURKISH BATH

Is now a recognised institution; and I am sorry to perceive that the spirited efforts of the proprietors have been so poorly seconded by the medical profession.

The healthful and light elasticity of feeling and exhilaration following its use, irrespective of the power of resistance of cold engendered, and its importance as a curative remedy, ought to insure its use by every person in the colony.

I may mention there are two Establishments in this city, the one in Lonsdale Street, and the other belonging to Mr. Croker, in Regent Street, Fitzroy; each one having its advocates, and each equally worthy of public patronage.

AERATED BREAD,

AS MANUFACTURED BY DR. DAUGLISH'S PATENT,

Is one of the most wholesome and digestible articles of diet that I can recommend to my

readers; it is much more nutritious than the common bread—is made more cleanlily—and the delicate stomach will not retain it the less from a knowledge of that fact. It is, also, much more easily digested, and therefore is invaluable to the Dyspeptic, being free from adulterations.

I am glad to perceive that a Company is about to start here to manufacture it.

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